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ATLANTIC COAST PILOT

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1879

EASTPORT TO BOSTON

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UNITED STATES
COAST AND GEODETIC SURVEY OFFICE,
WASHINGTON, D. C., *December 1, 1879.*

This, the second edition of the first volume of the Atlantic Coast Pilot, embraces, as did the first edition, the coast from Passamaquoddy Bay to Boston, with such additions and corrections as later surveys and more elaborate investigations have enabled the compiler to make.

The system adopted in this work includes—

I. A general description of the coast-line and of the shores of the several harbors and thoroughfares.

II. A detailed description of all dangers and obstructions to navigation on the coast and in the harbors, with directions for avoiding them.

III. Sailing directions for coasting, and for approaching and entering the harbors.

IV. Geographical positions of all light-houses and lighted beacons.

V. Practical information in regard to fog-signals, tides, tidal currents, ice formations, variation of the compass, and life-saving stations.

VI. Views of the coast and of the entrances to the more important harbors.

VII. Charts of the coast on a uniform scale, and of the principal harbors.

VIII. For marginal references the styles of lettering in use upon the charts of the Coast Survey (being upright for names, &c., applicable to land, and inclined when applicable to water) and also systematic sizes and weights in printed names to indicate the relative importance of coast features.

This second edition embodies the results of the Government surveys made since the publication of the first, and, like that edition, has been compiled by **John Service Bradford**, Assistant, Coast and Geodetic Survey, assisted by Mr. John W. Parsons. It includes the results of previous detailed surveys by the Coast Survey and those which Mr. Bradford's own continuous observations and verification (by visiting every locality along the coast and personally testing all sailing-lines, bearings and courses given) have developed.

The views of the coast and the approaches to the several harbors were drawn by Mr. John R. Barker.

The facts in relation to ice are from an able report by Lieut. C. A. Bradbury, U. S. Navy, Assistant, Coast Survey, who made a careful personal examination of this subject during the very cold winter of 1874–1875.

The compiler has exercised every care to avoid errors; but as absolute accuracy in a work of this class is scarcely possible, it is earnestly hoped that navigators will note all errors or omissions which they may discover or any additional matter they think should be inserted, and forward a notice of the same to the Superintendent of the Coast and Geodetic Survey, Washington City, D. C.

Carlile P. Patterson,
Superintendent.

NOTE.

All bearings and courses are *magnetic.*

All distances are in *nautical miles.*

Except where otherwise stated, all depths are at *mean low water.*

All can or nun buoys marked thus * are replaced during the winter months by spar buoys.

ATLANTIC COAST PILOT.

PASSAMAQUODDY BAY TO BOSTON.

GENERAL REMARKS

ON THE APPROACHES TO THE NEW ENGLAND COAST FROM SEAWARD.

Vessels approaching the coast of New England from the eastward must beware of the two dangerous banks which lie off the coast of Massachusetts, known as Cashe's Ledge and George's Bank. The former has four fathoms and the latter but two fathoms.

Cashe's Ledge lies to the eastward of Cape Ann, seventy-nine miles distant, and its geographical position as determined by Commander (afterwards Rear-Admiral) C. H. Davis, U. S. N., Assistant in the Coast Survey, is

Latitude ---------- **42° 56′ 0″ N.**
Longitude ---------- **68° 51′ 30″ W.**

Cashe's Ledge.

Its shoalest part is a flat white rock, about one hundred yards in diameter, having on it from four to seven fathoms, and known as *Ammen's Rock*. Soundings varying from eleven to thirty fathoms are found in a line **N.** by **E.** from this rock for a distance of thirteen miles, and **S.** by **W.** about six miles. The whole length of the shoal between the lines of twenty-five fathoms is sixteen miles. The following bearings and distances will be found useful:

	Miles.
Matinicus Rock Light-houses bear N. by E. ½ E. ----------	51
Monhegan Light-house N. ½ W. ----------	53
Cape Elizabeth Light-houses NW. ⅜ N. ----------	69
Cape Ann (Thatcher's Island) Light-houses W. ¼ N. ----------	78
Boston Light-house W. ½ S. ----------	98
Cape Cod (Highland) Light-house SW. by W. ½ W. ----------	76
Cape Sable (southern extremity of Nova Scotia) E. ⅜ S. ----------	145

Recent examinations on this shoal by Lieutenant Commander C. D. Sigsbee, U. S. N., Assistant in the Coast Survey, have resulted in the discovery of *another rock, with five fathoms*, four miles to the southwestward of Ammen's Rock. Its geographical position is

Latitude ---------- **42° 52′ 40″ N.**
Longitude ---------- **68° 54′ 30″ W.**

A vessel leaving Cape Sable and steering **W. ½ N.** for Cape Ann would cross the southern end of Cashe's Ledge in ten or twelve fathoms. To avoid it steer **W.** from Cape Sable until in Latitude 42° 41′ N., Longitude 69° W., when steer **W. by N. ¾ N.** for Cape Ann.

George's Shoal, or *The Georges*, as it is often called, is a very dangerous shoal, composed of sand ridges, some of which have but two fathoms water upon them. It lies one hundred miles to the eastward of Cape Cod,—the shoalest part being in

Latitude ---------- **41° 39′ 30″ N.**
Longitude ---------- **67° 42′ 15″ W.**

George's Shoal.

This spot has *two fathoms upon it* according to the latest surveys. The main body of the shoal is triangular in shape, and is composed of a number of narrow ridges with good water between them. Its northern extremity is in Latitude 41° 47′ N., Longitude 67° 46′ 30″ W., and has four and a half fathoms upon it. Its southern end is in Latitude 41° 34′ N., Longitude 67° 37′ W., and has upon it eight fathoms. Its western end is in Latitude 41° 11′ 20″ N., Longitude 68° 26′ W., and has upon it five and a half fathoms.

George's Shoal. The shoalest spot on George's Shoal lies near its eastern end, nearly midway of its length. Six miles **N.** by **W.** ¼ **W.** from it is *another spot with thirteen feet upon it,* in

Latitude ---------- **41° 44′ 10″ N.**
Longitude ---------- **67° 48′ 35″ W.,**

and is three miles to the southward of the north point of the shoal. The above positions make the main body of the shoal fifteen miles long in a **N.** by **W.** and **S.** by **E.** direction, and about three miles wide; while the width of the bank is not less than seventy miles in a **NE.** and **SW.** direction.

Master Robert Platt, U. S. N., Assistant in the Coast Survey, during his Current explorations on this bank in 1877 discovered *a spot with eight fathoms,* in Latitude 41° 24′ 20″ N., Longitude 68° 11′ W., which he thinks may be a prolongation of Cultivator Shoal, six miles to the northward. This supposition is strengthened by the existence of soundings of *ten, eleven,* and *fifteen fathoms* to the southward of this eight-fathom shoal, but which have always been considered detached shoals on George's Bank.

Cultivator Shoal, as now shown upon the charts, has three fathoms upon it, and lies twenty miles **W.** ½ **N.** from the shoalest part of The Georges. From its shoalest part

	Miles
Matinicus Rock Light-houses bear S. ¼ W.	131
Monhegan Light-house N. ½ W.	136
Seguin Light-house N. by W. ¼ W.	142
Cape Elizabeth Light-houses N NW.	145
Cape Ann (Thatcher's Island) Light-houses NW. ½ W.	122
Cape Cod (Highland) Light-house NW. by W. ¾ W.	88
Monomoy Point Light-house W. ⅝ S.	82
Davis' South Shoal W. by S. ¾ S.	87

This shoal was so named from the ship "Cultivator," which struck upon it when drawing twenty-two and a half feet.

The shoal ground of The Georges, above referred to as George's Bank, is seventy-five miles long in a **NE.** and **SW.** direction; fifty miles wide in an **E.** and **W.** direction near the middle of the bank; and sixty miles wide in the same direction at its southern end. Five and a quarter fathoms is found forty-one miles **SW.** by **W.** from the shoalest spot (two fathoms) on the main shoal; ten fathoms twenty-eight miles **SW.** ¾ **W.** from the same spot; nine fathoms thirteen miles **SW.** by **W.** from it; eight fathoms seventeen miles **E.** from it; nine fathoms fourteen miles **ENE.** from it; ten fathoms fourteen miles **N.** by **E.** from it; and eight fathoms (as developed by Master Platt) twenty-six miles **SW.** by **W.** ¾ **W.** from it. The five-fathom spot is in Latitude 41° 11′ N., Longitude 68° 25′ W., and is close to the southwestern extremity of the shoal ground. The southernmost

George's Bank. ten-fathom spot is in Latitude 41° 20′ N., Longitude 68° 10′ W. The nine-fathom spot on the western side of the shoal is in Latitude 41° 31′ N., Longitude 67° 55′ 15″ W. The eight-fathom spot is in Latitude 41° 43′ 15″ N., Longitude 67° 21′ W. The nine-fathom spot on the eastern side of the shoal is in Latitude 41° 47′ 10″ N., Longitude 67° 27′ W. The ten-fathom spot north of the shoal is in Latitude 41° 54′ N., Longitude 67° 45′ W. The eight-fathom spot, discovered by Master Platt, has been already mentioned, and its latitude and longitude given.

The general name *Stellwagen's Shoal Ground* has been given, though erroneously, to George's Bank, and must not be confounded with **Stellwagen's Bank,** which lies between Cape Ann and Cape Cod, off the entrance to Massachusetts Bay. (See Approaches to Boston Harbor.)

George's Shoals were surveyed in 1821, under the direction and at the expense of E. M. Blunt, Esq., of New York City. As little as three feet at low water was reported as the result of this survey on the shoal, and the opinion was expressed that, at a low run of tides, the sand was bare. The sea, however, was too heavy to determine anything with accuracy. Old fishermen, also, familiar with the bank, report it as occasionally bare.

The following extracts are made from the report of this survey:

"On the eastern edge of the shoal, even in calm weather, (unless it be high or low water,) the tides run with great rapidity, and form considerable breakers when setting to the westward, and a large water-fall when setting to the eastward.

"The breakers on this shoal are very heavy, and when there is sufficient sea to endanger a vessel, they may be seen some miles and heard at a very considerable distance, and as the shoalest part is not more than a cable's length inside, and no danger near it, a vessel might avoid it.

"At anchor at different places and on different days, we determined the set and strength of the tides and, as nearly as possible, their rise and fall. Their rise is from six to nine feet. They set around the compass every tide; setting **SE.** nearly, at full moon, and running from one to four knots per hour at a mile's distance from the breakers. The mean rate, however, is materially varied by the winds; they set strongest at **W SW.** and **E NE.**, and which is undoubtedly the strength of the flood

and ebb. From these causes and variety in the tides arises a principal danger in approaching the Shoals. When under way about the Shoals, in a few hours' time we found ourselves drifted far out of our reckonings. * * By allowing for the sets of the tides as ascertained at anchor, the observations and reckonings agreed very nearly. Should any vessel fall in with the Shoals, a knowledge of the course and strength of the tides would be of the greatest importance.

George's Shoal and Bank.

"The bottom of the bank is of such a narrow character that it is difficult for a vessel to ascertain her situation by it. We often found a great variety of soundings in a very short distance, such as sands of various colors, and differently mixed, coarse and fine, gravel, pebbles of various colors, stones, sponge, and shells.

"Notwithstanding this variety, some idea of the general character of the soundings may be useful. To the westward of the Shoals, and at some distance from them, the bottom is coarse sand and gravel of all colors; to the northwestward, a mixture of white, black, and yellow sand; to the northeastward, chiefly gravel and pebbles; to the eastward, fine white and yellow sand; and in Latitude 41° 57′ N. and Longitude 68° 40′ W., some white moss; to the southeastward, fine white and yellow sand.

"As the Shoals are approached, in whatever direction, the soundings become coarse, and are frequently mixed with shells of different kinds. Near the shoal much of the bottom is pebbles; and to the eastward of the largest and most dangerous shoal there are stones of the size of hen's eggs, with moss and sponge on some of them. Near the southeast point are from fifteen to twenty fathoms; a prevailing character of the soundings is green shells, and chiefly of the species usually called sea-eggs. If a vessel be far enough to the southward to avoid danger she will have no shells. The quality of the soundings, as far as we were enabled to survey the bank, will be best understood from the chart, where they have been carefully rated.

"The holding-ground is not good. But the vessels employed in the survey, by having a long scope of cable, rode out a considerable gale of wind for twenty-two hours, on the eastern side of the main shoal and to the windward of it. At this time the sea broke very high in ten fathoms of water."

In 1837 this shoal was resurveyed by Lieutenant (afterwards Rear-Admiral) Charles Wilkes, and others, in the U. S. brig "Porpoise." His survey differs materially from that of Mr. Blunt, both in the depth of water found on the shoal and in the position of the shoalest part. Lieutenant Wilkes says:

"The shoalest water found on any part of the bank was two and a half fathoms, or fifteen feet, reduced to low water; and this is only to be found in two small places, viz:

Latitude	**41° 40′ 13″ N.**
Longitude	**67° 44′ 10″ W.**
Latitude	**41° 40′ 33″ N.**
Longitude	**67° 44′ 30″ W.**

"The whole of the shoal is composed of hard sand-spits; fine sand on the shoalest places, and coarser as the water deepens, until it becomes large pebbles without sand.

"The rise and fall of tides is seven feet, extremely regular,—the first part of the flood setting **N NW.**, the latter part **N.** by **E.**, and ebb **S SE.** and **S.** by **W.** The flood runs four and a half hours, ebb five and a half hours; greatest velocity two and six-tenths of a mile, from half an hour to two hours in changing, going round with the sun on from **N.** by way of **E.** The wind has but little effect on the velocity. High water at full, and change at $10^h\ 30^m$."

By comparing Lieutenant Wilkes' report with that of Mr. Blunt, made in 1821, we learn, either that the former did not find the shoalest water on the bank, or that the depth of water varies in different years, as well as the position of the shoal. That the shoal shifts its position from time to time is generally believed by the fishermen.

The variation of the compass on The Georges, or in their vicinity, is, for 1879, **12° 45′ W.**

In coming from the southward for George's Bank you will get soundings in Latitude 40° 4′ N., if on the southwestern part of the bank. (Should you not get soundings in Latitude 40° 30′ N., you may be certain that you are to the eastward of the shoal, and must direct your course accordingly, to clear it. The first soundings will then be in from sixty to seventy-five fathoms.) When steering to the northward the water will shoal gradually to twenty fathoms, in Latitude 41° 20′ N. This depth of twenty fathoms extends for a distance of ten or twelve leagues east or west.

Later examinations by Commander Jno. A. Howell, U. S. N., Lieutenant Commander C. D. Sigsbee, U. S. N., and Master Robert Platt, U. S. N., Assistants in the Coast Survey, while they have developed few new features of importance in the depths on this shoal, have resulted in a more accurate delineation of the shape and extent of the bank and of the character of the bottom; and Master Platt's Current observations, hereto appended, are of themselves a valuable addition to our knowledge of this dreaded shoal. These observations were made, under the direction of the Superintendent of the Coast Survey, during the summer and autumn of 1877, and their importance to navigation cannot be too highly estimated.

Currents on George's Bank. In his report to the Superintendent, Master Platt calls attention to a characteristic sounding of *eleven fathoms* near the eastern edge of George's Bank. It is in Latitude 41° 34′ 30″ N., Longitude 67° 25′ W., and has depths of from twenty to twenty-five fathoms close to it on the east, from fifteen to seventeen on the south, and from sixteen to twenty fathoms on the west. The bottom is "shells and pebbles." Striking soundings on this spot:

	Miles.
The thirteen-feet spot on the Northern end of George's Shoal bears NW. ⅛ W.	19
The shoal of The Georges (twelve feet) NW. ⅞ W.	16
Southern end of The Georges W. ½ N.	10
Asia Rip (Nantucket Shoals) W. by S. ¼ S.	100
Davis' South Shoal Light-vessel W. ¼ S.	118
Nantucket (Great Point) Light-house W. ¾ N.	121
Cape Cod (Highland) Light-house NW. by W. ½ W. Westerly	123
Cape Ann (Thatcher's Island) Light-houses NW. ½ W.	157

From the report of Master Platt to the Superintendent of the Coast Survey, the following extracts in regard to this bank are made:

"At Stations Nos. II and III (see Current Chart facing this page) we particularly noticed the tidal swell, which made up regularly with each flood-tide and subsided with the ebb. I have spoken with the masters of several fishing vessels upon this subject, and they all informed me that 'they had always noticed it, but had'—strange to say—'attributed it to the fog!'"

"At Station No. III we were also surrounded, during the strength of the flood and ebb, with strong and well-marked tide-rips, which disappeared at slack water." These tide-rips (see Current Chart) are very alarming when first seen, as they look like the breakers in shoal water. Master Platt says, in reference to them:

"When in Latitude 42° N., Longitude 66° 30′ W., we saw what looked like shoal water or breakers ahead, but, on sounding, found one hundred and seventeen fathoms. We drifted along with the current until we came among these apparent breakers, and found them to be caused by a very heavy tide-rip. The sea was so high and 'coaming' that we were obliged to reduce sail, three-reef the mainsail, and haul the boom well out to save our mainmast. These heavy tide-rips are nearly always well marked, and a stranger coming among them, especially at night, would be apt to be very much alarmed. I would therefore suggest that their approximate positions be marked upon our charts. They extend between Latitudes 42° N. and 43° N., and from Longitude 66° 30′ W. to 68° 30′ W., are from twenty to forty miles long and at least ten miles wide."

Jeffrey's Bank. Jeffrey's Bank, upon which the shoalest sounding yet found is thirty-seven fathoms, lies about seventy miles **E SE.** from Cape Elizabeth, on the coast of Maine, and one hundred and thirty miles to the westward of Cape Sable. It lies about **E NE.** and **W SW.**, and is about eleven miles long. The shoalest water (thirty-seven fathoms) is near the western end of the bank.

The following bearings and distances may be useful to navigators coming from sea and striking soundings on Jeffrey's Bank:

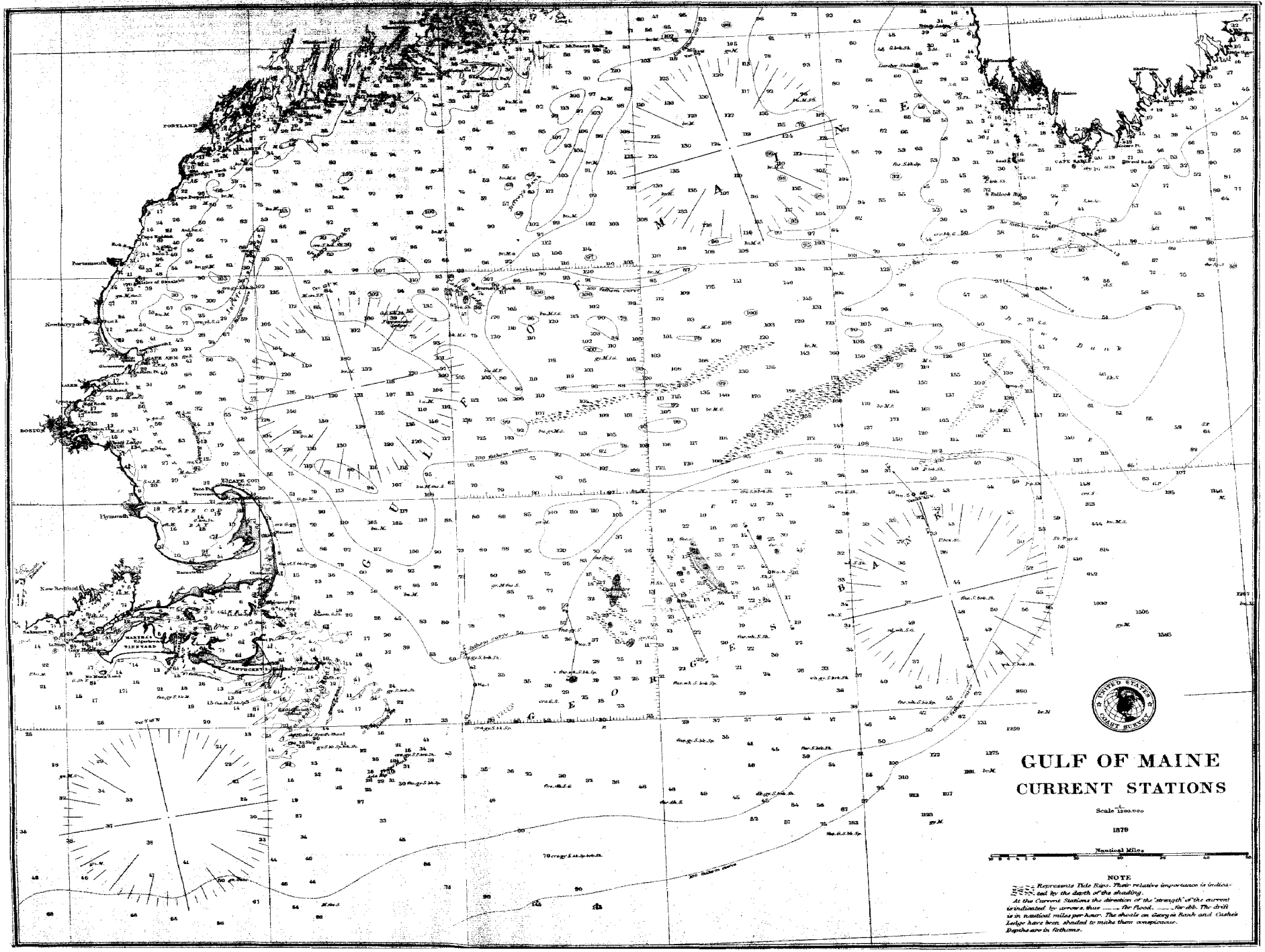
	Miles.
Cape Sable and Seal Island Light bear E. by S. ½ S.	130
Mount Desert Rock Light NW. ½ N.	38
Cape Elizabeth Lights W NW.	71
Cape Ann (Thatcher's Island) Lights W. by S.	99
Boston Light W. by S. ⅜ S.	120
Cape Cod (Highland) Light SW. ⅞ W.	104

From the eastern end of the bank Matinicus Rock Light-houses bear **NW.** by **N.** ¾ **N.**, distant twenty-five miles; while from its western end they bear **N.**, distant twenty-six miles.

Fippenies Ledge. *The Fippenies* or Fippenies Ledge is a small bank to the westward of Cashe's Ledge, and has thirty-nine fathoms, "gravel, sand, and broken shells." It has a diameter of five miles, lies between fifteen and twenty miles **W.** from Sigsbee's five-fathom rock on Cashe's Ledge, twenty-five miles **S.** by **E.** ¾ **E.** from Platt's Bank, and thirty-nine miles **SE.** by **S.** from the northern extremity of Jeffrey's Ledge.

From the centre of Fippenies Ledge, Cape Ann (Thatcher's Island) Light-houses bear **W.** ⅝ **N.**, fifty-eight miles; Cape Cod (Highland) Light-house **SW.** ¾ **W.**, fifty-seven miles; and Davis' South Shoal Light-vessel **SW.** by **S.** ½ **S.**, one hundred and fifteen miles distant.

Jeffrey's Ledge. Jeffrey's Ledge, an extensive shoal, (not to be confounded with Jeffrey's Bank,) lies off the coasts of Massachusetts and New Hampshire, is forty miles long **NE.** and **SW.**, and has from eighteen to forty fathoms upon it. Its southern end, five miles from Cape Ann,


PLATE No. 1618
GULF OF MAINE
CURRENT STATIONS
Scale 1/200.000
1879
Nautical Miles
NOTE
Represents Tide Rips. Their relative importance is indicated by the depth of the shading.
At the Current Stations the direction of the 'strength' of the current is indicated by arrows thus ——. The flood, ——, for ebb. The drift is in nautical miles per hour. The shoals on Georges Bank and Cashes Ledge have been shaded to make them conspicuous.
Depths are in fathoms.
UNITED STATES COAST SURVEY
PORTLAND
Portsmouth
Newburyport
BOSTON
Plymouth
CAPE COD
New Bedford
NANTUCKET
MARTHAS VINEYARD
GULF OF MAINE
GEORGES BANK

is in Latitude 42° 37′ 45″ N., and extends from Longitude 70° 23′ 20″ W. to 70° 28′ 30″ W., showing the ledge to be over five miles wide at this point. Its southwestern extremity is four miles and a half **E.** by **S.** ½ **S.** from Thatcher's Island Lights. The northern end of the ledge is in Latitude 43° 11′ N., Longitude 70° W., and from it Cape Elizabeth Light-houses bear **N.** ¾ **W.**, twenty-five miles; Portsmouth Entrance **W.**, thirty-two miles; and Thatcher's Island Light-houses **SW.** ¾ **W.**, forty-two miles distant. ***Jeffrey's Ledge.***

Characteristic Soundings and Bottoms on Jeffrey's Ledge.—*A vessel bound from Seguin to Cape Ann* will cross the tail of the ledge close to its southwestern end, meeting the bank in Latitude 42° 42′ N., and crossing it in Latitude 42° 40′ 30″ N. When she falls in with it, if the course from Seguin has been made good, she will be five miles **NE.** by **E.** ¾ **E.** from Thatcher's Island Light-houses, and will have from twenty-eight to thirty fathoms. The bottom, on coming on to the bank, will change from "grey mud" to "stones and broken shells;" and when on the bank it will be "fine grey and black sand." Should the vessel be to the eastward of her course, she will have from thirty-four to forty-five fathoms, "blue clay," near the edge of the bank; changing, on striking the shoal, to "mud and fine grey and red sand." Soundings will be in from twenty to forty fathoms, and she will cross the bank, if she continues her course, in from twenty-three to twenty-six fathoms, "grey sand" and "grey and black sand."

Such a vessel, bound from Seguin to Cape Ann in thick weather, getting soundings in from forty to forty-five fathoms, "blue clay," on the northwestern edge of Jeffrey's Ledge, and then changing to thirty and thirty-seven fathoms, "mud, fine grey and red sand," will know that she is to the eastward, and Cape Ann Light-houses bear **W.** by **S.** ¾ **S.**, from seven to ten miles distant.

If she is to the westward of her course she will not hit the ledge at all.

A vessel bound from Eastport to Cape Ann, if she steers a straight course **W SW.**, will meet the ledge in Latitude 42° 49′ N. and Longitude 70° 14′ W., and will have forty-two fathoms, "fine grey and black sand." In crossing it she will have from twenty-eight to thirty fathoms. The bottom will vary from "coarse and fine grey and red sand, with black specks," to "coarse white and yellow sand and black pebbles." She will then drop off into forty-five fathoms, "blue clay," and shoal again to thirty fathoms, "fine grey and red sand mixed with mud." This shows that she is crossing the southwestern end of the ledge, and she will leave it, in twenty-nine fathoms, four miles **E NE.** from Thatcher's Island Light-houses.

Should a vessel in thick weather get soundings on the edge of the ledge, in fifty-three fathoms, "fine grey and black sand," and change to "fine grey sand and red gravel," she is to the southward of her course, and should steer **W.** by **S.** ½ **S.** for Thatcher's Island Light-houses.

A vessel bound from the Bay of Fundy to Cape Ann crosses Jeffrey's Ledge in Latitude 42° 46′ N., Longitude 70° 16′ W., in a **W.** by **S.** ½ **S.** direction. The soundings on its eastern edge will be fifty-three fathoms, "fine grey and black sand," and will change to thirty-two fathoms, "fine grey sand and red gravel." The soundings on the ledge will vary from twenty-four to thirty fathoms; and when the shoal is crossed Cape Ann Light-houses will bear **W.** by **S.** ½ **S.**, four miles distant.

A vessel bound from Cape Sable to Cape Ann will cross the ledge in Latitude 42° 39′ N., meeting it in Longitude 70° 22′ W. and leaving it in Longitude 70° 28′ 30″ W. When the bottom changes to "grey" or "dark mud" she is over the bank, and Thatcher's Island Light-houses bear **W.** ½ **N.**, distant four miles.

Lieutenant (now Rear-Admiral) Alexander Murray, U. S. N., Assistant Coast Survey, surveyed this ledge in 1858–59, and had the following depths:

Thatcher's Island Light-houses bearing **SW.** by **W.** ½ **W.**, three miles distant, twenty-one fathoms; same lights bearing **W.** by **S.** ¾ **S.**, six miles and three-quarters, twenty fathoms; with Thatcher's Island Light-houses bearing **SW.**, fifteen miles and three-quarters, and White Island Light-house (Isles of Shoals) **NW.**, fourteen and a quarter miles distant, eighteen fathoms. His distances, however, are only approximate.

This ledge has been lately re-examined by Master Robert Platt, U. S. N., and Lieutenant Commander C. D. Sigsbee, U. S. N., Assistants in the Coast Survey, and its depths and outlines well determined. (See "Sailing Chart of the Atlantic Coast from Cape Sable to Cape Hatteras," published by the U. S. Coast Survey.)

In the course of his survey Master Platt discovered and carefully examined Platt's Bank, (named after the discoverer,) which lies about sixteen miles to the eastward of the northern end of Jeffrey's Ledge, and about thirty miles to the westward of Cashe's Ledge. (Measurements taken to the centre of the bank.) It has twenty-nine fathoms, "coarse sand and broken shells," and is nine miles long in an **E.** by **S.** and **W.** by **N.** direction, and about four miles wide **N.** and **S.** ***Platt's Bank.***

The eastern extremity of Platt's Bank is in Latitude 43° 7′ 30″ N., Longitude 69° 30′ W.; its western extremity is in Latitude 43° 8′ N., Longitude 69° 42′ W.; and from its centre

	Miles.
Cape Sable Light-house bears E. $\frac{7}{8}$ S.	179
Mount Desert Rock Light-house E. by N. $\frac{7}{8}$ N.	83
Matinicus Rock Light-houses NE. by E.	52
Monhegan Light-house NE. $\frac{3}{4}$ N. Northerly	40
Seguin Light-house N. $\frac{3}{4}$ E. Nearly	35
Cape Elizabeth Light-houses NW. by N. $\frac{1}{2}$ N.	37
Boon Island Light-house W. by N. $\frac{3}{8}$ N.	38
Isles of Shoals (White Island) Light-house W. $\frac{3}{8}$ N.	46
Cape Ann (Thatcher's Island) Light-houses W. by S. $\frac{5}{8}$ S.	52
Cape Cod (Highland) Light-house SW. by S.	68
Davis' South Shoal Light-vessel S SW. Southerly	133
North end of Cultivator Shoal (three-fathom spot) S. by E. $\frac{3}{4}$ E.	110
Fippenies Ledge S. by E. $\frac{3}{4}$ E.	25
Shoal spot (thirteen feet) on north end of George's Shoal SE. by S. $\frac{1}{2}$ S.	117
Cashe's Ledge (Sigsbee's rock) SE. $\frac{1}{4}$ E.	35
Cashe's Ledge (Ammen's Rock) SE. $\frac{3}{4}$ E.	36

BAY OF FUNDY.

The entrance to this great bay lies between **Bryer's Island** (a small island off the southwestern end of Nova Scotia) and **Libbey Island,** which lies close in with the entrance to Machias Bay on the coast of Maine. The geographical position of Bryer's Island is

Latitude ..... 44° 14′ 57″ N.
Longitude ..... 66° 23′ 40″ W.,

while that of Libbey Island is

Latitude ..... 44° 34′ 5″ N.
Longitude ..... 67° 22′ 2″ W.,

the distance between the two islands being forty-six nautical miles. The bay is deep, and, as a general rule, its shores are bold-to. The tidal current runs with great velocity; and the frequent changes of weather, the set and changes of currents, and the thick and long-continued fogs, are apt to confound the seaman, however experienced he may be or however good his judgment. At the head of the bay the rise of tide is from fifty to sixty feet, the flood coming in, generally, in three immense "*bores*," as they are called, or tidal waves. The currents are often perplexing, and always swift.

Fortunately there are many safe and commodious harbors on the shores of this bay to which vessels may resort in case of necessity, even without a pilot. For accurate and detailed directions for these harbors, we cannot do better than to refer the seaman to the book of directions which accompanies the British chart of these localities.

Near the southwestern end of the Bay of Fundy, and on its north shore, lies the entrance to **Passamaquoddy Bay,** an extensive bay opening from the northern shore about thirty miles to the eastward of Libbey Island. With the St. Croix River, which flows into it, this bay separates the territories of Great Britain from the United States.

Grand Manan. In the entrance to the Bay of Fundy lies the island of Grand Manan, belonging to Great Britain, which, as it lies so near our own coast, and is often resorted to by both coasters and fishermen, demands a short description in this place. It has several good harbors of refuge. From West Quoddy Head (on the mainland) its nearest point, which is on the northwestern side, is distant five miles and three-quarters. "The soil is generally considered to be good, and the inhabitants are enabled to raise from it the productions of the neighboring shores." The trees are fir, beech, birch, maple, pine, &c., and are of a good size.

The western shores are very straight and uniform; consisting of cliffs which rise to the height of from one hundred and eighty to four hundred feet above sea level. On this side there are no harbors, with the exception of **Dark Cove,** which lies four miles to the southwestward of the north point of the island, called Bishop's Head. This cove affords shelter only for the smallest vessels, and for them only after two-thirds flood. But there is good water in it after having crossed the bar.

Along the western shore of Grand Manan, as far as **Southwest Head,** there are three, four, five, and six fathoms close to the land, deepening to thirteen, thirty, and forty fathoms at half a mile off, and thence, rapidly, to forty-five and fifty fathoms at the distance of a mile. The flood-tide setting to the northward and the ebb setting to the southward, follow the direction of this coast. At spring-tides the velocity of the tidal current ranges from two and a half to three knots an hour.

Bishop's Head. Bishop's Head, as above-mentioned, forms the northern end of Grand Manan, and its western extremity is called **Long Eddy Point.** The head is abrupt and bold, having, at the distance of a quarter of a mile from shore, a depth of from thirty to forty fathoms;—the land behind it rising to a height of three hundred and fifty feet. It is reported that the British government intends to erect a light-house on this head.

The eastern shores of Grand Manan are much lower than the western, and are much indented. Many small islands lie off that coast; between and among which are several excellent harbors, where, with a local pilot, the largest vessels may anchor with safety. For descriptions of the various harbors on the eastern side we must again refer to the English book of directions. This work is accurate, and its descriptions are very plain and terse.

DANGERS

IN THE ENTRANCE TO THE BAY OF FUNDY AND VICINITY OF GRAND MANAN.

Many dangerous ledges and shoals lie in the entrance to this bay off Grand Manan, and render a near approach to that island, especially in thick weather, very dangerous for strangers. The principal of these shoals lies to the southward and southwestward of the island, the western shores being, as above remarked, bold-to. There are also many dangers off the eastern shore,—a description of which does not, however, come within the scope of this work. Of the rocks to the southward the most important are collectively known as the Manan Ledges, and an accurate description of them is given by the English naval officers who surveyed them. The following extracts are made:

Manan Ledges.

"They consist of **Black Rock**, the northeasternmost, which is ten feet out at high water; **The Brazils**, which are out only at the low spring-tides; **The Tinker**, or northwesternmost rock, which is dry at mean low water; **The Diamonds**, awash at low spring-tides; **Crawley Shoal**, which has eighteen feet at low water; **The Rams**, or westernmost rock; **The Proprietor**, which is just seen at low water, but has foul ground extending nearly three-quarters of a mile to the southward from it; and The Old Proprietor, the southernmost and outermost of these dangers, which is out at half-tide. Over and through the channels among these rocks there is a rapid tidal current of from four to six knots an hour, the flood running to the eastward and northeastward and the ebb southwestward and westward. For a considerable distance southeastward from Black Rock is a very heavy tide-rip, on the ebb, known as *Bull Head Rip*. These ledges should therefore have a wide berth, and strangers should very carefully avoid being drawn into either of the passages among them. To go clear of the southernmost of these dangers keep Southwest Head of Grand Manan well open to the southward of the south point of Three Islands, bearing **NW.** by **W.** During an easterly wind the tide-rips are impassable."

"The Old Proprietor, as before observed, is the outermost and most dangerous of the Manan Ledges. It dries at half-ebb, covers a space of half an acre at low water, and, when covered, the tide sets strongly over it. There are from twenty-five to thirty-five fathoms a quarter of a mile to the southward of it. When upon it, Gannet Rock Light-house will bear **W.** by **S.**, five miles and two-thirds distant; Black Rock **N.** by **E.**, three miles and two-thirds; and the south point of Three Islands **NW.** by **W.** $\frac{1}{2}$ **W.**, four miles distant. The narrow ridge of foul ground running southward from The Proprietor, upon which are from two to four fathoms, is one-quarter of a mile to the westward of The Old Proprietor.

The Old Proprietor.

"Clarke's Ground, a rocky shoal of six and seven fathoms, over which the ebb creates a heavy rippling, lies a mile and a half **NE.** by **E.** $\frac{3}{4}$ **E.** from The Old Proprietor; and another, called *The Roaring Bull*, whereon is six or eight fathoms, is said to lie three or four miles to the eastward of it. There is usually a heavy and dangerous ripple over this shoal.

Clarke's Ground.

"Three Islands, or the **Three Kent Islands**, as they are sometimes called, are low and ledgy. The eastern side of the largest is bold to the rocks, which are at all times visible. About three-eighths of a mile off the northwestern side is a ledge named *The Constable*, dry at low water. Under the lee of these and the **Green Islands** anchorage may occasionally be obtained in from seven to fourteen fathoms. There is, however, *a small spot of three and a quarter fathoms*, half a mile off the middle of the western side of the Three Islands, which must be avoided.

Three Islands.

"The Murr Ledges, very dangerous rocks, which obstruct the approaches to the bay under Grand Manan, are formed by a number of detached ledges lying to the westward of Manan Ledges, and to the southward of Southwest Head of Grand Manan. They are surrounded and separated by deep water, and, in some cases, wide channels. But no stranger should attempt any of the passages among them. The flood sets to the eastward, and the ebb to the westward, over and among the dangers, with a velocity of three and four knots an hour. The easternmost of the Murr Ledges is called Gannet Rock; the southernmost, St. Mary's Ledge; the westernmost, Long Ledge; and the northernmost, Wallace's Ledge.

Murr Ledges.

"Gannet Rock is a small rock about twenty-five feet above water at high tide, with many sunken rocks and ledges about it. It lies about three miles and a half **S SW.** from the south point of the Three Islands. The ledges and sunken rocks in the vicinity always break. There is a light-house on the Gannet, which shows a brilliant white light, flashing three times in every minute, and visible about twelve miles. The tower is painted in vertical black and white stripes, and its geographical position is

Gannet Rock and Light-house.

Latitude ---------- **44° 30′ 40″ N.**
Longitude ---------- **66° 46′ 48″ W.**

"A gun is fired in reply to signals during foggy weather. The light, from its proximity to several very dangerous ledges and shoals, ought not to be run for. It is mainly intended to give timely warning to vessels which are, by the rapid tides in the vicinity and ignorance of their position, in danger of being wrecked.

"Vessels should not, except in cases of extremity, attempt to run in between this rock and The Old Proprietor, as there are some dangers in the way. The bottom is rocky and the tidal current is very swift."

Gannet Rock Light-house bears from

	Miles.
The Old Proprietor, W. by S.	5 2/3
Southwest Head of Grand Manan, SE. by S. ½ S.	7 1/4
Wallace's Ledge, SE. by E.	4 1/4
St. Mary's Ledge, E. by N. ¾ N.	2 3/4
Machias Seal Island Light-houses, E. by S. ½ S.	13 3/4

"St. Mary's Ledge, the southernmost of the Murr Ledges, is very small, and bare, except at 'high water of spring tides.' All around it and close-to are from five to nineteen fathoms.

St. Mary's Ledge. From Gannet Rock Light-house it bears **W.** by **S.** ¾ **S.**, distant two miles and three-quarters,—the depths between it and the Gannet varying from twelve to twenty-five fathoms. From **Yellow Ledge**, which is about ten feet above high water, it bears **SE.** by **E.** ¼ **E.**, three-quarters of a mile distant. There is *a four feet rock* between them, which breaks with a moderate swell.

"Long Ledge, the westernmost of these dangers, lies in a **N NE.** and **S SW.** direction, is a mile and a half long and four hundred yards broad, and is separated from Yellow Ledge by a deep channel a third of a mile wide. Its northern part is just uncovered at high water; but on

Long Ledge. its southern half are patches of from six to fifteen feet, and some which are awash at low water. Quite near its western side are soundings ranging from ten to eighteen fathoms. Between Wallace's Ledge and the northern end of Long Ledge lies a small, bold rock, called **West Ledge**, just visible above water at high spring tides.

Wallace's Ledge. "Wallace's Ledge, the northernmost of the Murr Ledges, is bare at half-ebb. It is small, and has from six to twelve fathoms close to it and all around it. When you are on this rock you will be four miles and a quarter **NW.** by **W.** from Gannet Rock Light-house; three-quarters of a mile **N.** by **E.** ½ **E.** from West Ledge; four miles south of Southwest Head of Grand Manan; and nine miles and three-quarters **E.** ⅔ **S.** from the lights on Machias Seal Island.

"There is a clear channel, with from ten to twenty-two fathoms, between Wallace's Ledge and Southwest Head of Grand Manan; but between it and Machias Seal Island are four dangerous rocks that must be very carefully avoided. They are named, respectively, Bull Rock, Middle Shoal, Southeast Ledge, and Southeast Shoal.

"Bull Rock is a small rock, with two feet at low water, and lies nearly seven miles **W.** by **N.** ⅛ **N.** from Gannet Rock Light-house. There is from nine to twenty-three fathoms all

Bull Rock. around it, and consequently it may generally be discovered by the breakers. From Southwest Head of Grand Manan it bears **SW.** by **S.**, six miles; from Machias Seal Island lights it bears **E.** by **S.** ½ **S.**, six miles and three-quarters; and it is three miles to the westward of the westernmost of the Murr Ledges, with soundings of from fifteen to twenty-seven fathoms between the two.

Middle Shoal. "Middle Shoal is likewise a very small ledge, with deep water all around it, and has eighteen feet at low water. There is generally a rippling of the sea in its vicinity, and in heavy weather it always breaks. It bears from Bull Rock **N NW.**, four miles and three-eighths; **W.** by **S.** from Southwest Head, a little over five miles; and **E NE.**, five miles and one-eighth from Machias Seal Island lights.

"Between this shoal and Grand Manan there is a clear passage; and also between it and Bull Rock, but the channel between it and Machias Seal Island is obstructed by the North Rock and North Shoal.

Southeast Ledge. "Southeast Ledge has five fathoms upon it, with a rocky bottom. There is quite a tide-rip on it, but it breaks only in heavy weather. From Yellow Ledge it bears **W.** ¼ **S.**, six miles and one-third; from Bull Rock **SW.** ½ **W.**, three miles and three-quarters; and from Machias Seal Island lights **SE.** ½ **S.**, five miles and three-quarters distant.

"Southeast Shoal is a very dangerous patch, with seven and eight feet upon it at low water; is small, steep-to, and breaks if there is any sea. It bears **SE.** from Machias Seal Island

Southeast Shoal. Light-houses, a mile and a quarter distant. There are soundings of from fifteen to thirty fathoms between the shoal and the island, except in *one small spot, which has twelve feet upon it*, and which is a quarter of a mile from the island. The flood runs **NE.** by **N.** over this shoal, and the ebb **SW.** by **S.**, at the rate of three knots an hour."

Although the above descriptions have been given for guidance in cases of emergency, it is strongly urged upon strangers not to attempt to pass through any of these inside channels, but to keep outside, clear of all the above-described dangers.

Machias Seal Island, called on our charts simply **Seal Island**, is a small, low, rocky islet about four hundred yards long, a hundred and fifty yards broad at its widest part, and about twenty feet

above high-water mark. Near the centre of the island stand two white light towers, one hundred and sixty feet apart, and bearing **E SE.** and **W NW.** from each other, which show two fixed white lights from a height, respectively, of fifty-four and fifty-eight feet above sea level. These lights are visible about fifteen miles, and are intended as leading lights for clearing the Murr Ledges and the other dangers to the southward of Grand Manan. Their geographical position is ***Machias Seal Island and Light-houses.***

Latitude	**44° 30′ 7″ N.**
Longitude	**67° 6′ 5″ W.**

Vessels standing to the northward, with these lights to the westward, distant about five miles, must go about as soon as the two lights come in range, to avoid the Murrs. "A gun is fired every four hours during a fog, as a warning to vessels." This is an entirely insufficient precaution. There should be either a powerful steam-whistle or an air-trumpet on this island, or else the gun should be fired with great frequency.

"From these light-houses

	Miles.
Southeast Shoal bears SE.	$1\frac{1}{4}$
Southeast Ledge SE. ½ S.	$5\frac{3}{4}$
St. Mary's Ledge E. ⅝ S.	10
Southwest Head E. by N. ½ N.	$10\frac{1}{4}$
Middle Shoal E NE.	$5\frac{1}{8}$
North Shoal N. ½ E.	$1\frac{5}{8}$

"Three miles and a half **W.** of the Seal Island Light-houses lies a rock which has caused the wreck of several vessels. It was seen by Captain Johnston, of the ship 'Liverpool,' (trading to St. Johns,) in 1834, and is said to be well known to the regular traders and pilots. We propose to name this **Liverpool Rock.**

"North Rock is about four feet out at high spring tides. It is situated on the middle of a shoal of twenty-one feet, and bears **NE.** by **N.** from the Seal Island lights, two miles and a quarter distant. The shoal around the North Rock is about one-third of a mile in extent, and lies in an **E SE.** and **W NW.** direction. Around it the soundings range from six to fourteen fathoms close-to, and there is always a tide-rip in the neighborhood. There are from fifteen to forty-six fathoms in the channel between North Rock and the ledge extending from the north end of Seal Island. ***North Rock.***

"North Shoal breaks in heavy weather; is very small, has seven or eight feet on it, and the depths around it vary from nine to twelve fathoms. From Seal Island Light-houses it bears **N. ½ E.**, a mile and five-eighths distant, and from North Rock **W.** by **S.**, a little over one mile distant. Between this shoal and Machias Seal Islands the depths range from twenty to fifty fathoms; and between it and North Rock they vary from fifteen to twenty-five fathoms. All around and over this shoal there is always a rippling sea. ***North Shoal.***

"Grand Manan Bank has soundings over it varying from twenty-four to thirty and forty fathoms, and makes a tide-rip of very great extent. The current of flood sets over it in a northeasterly direction, and the ebb sets to the southwestward. The velocity is equal on both tides,—being about a mile and a half an hour." The shoalest part of the bank, "on which is a depth of twenty-four fathoms, is situated in Latitude 44° 14′ 30″ N., Longitude 67° 3′ W., or fifteen miles and three-quarters **S. ¾ W.** from Machias Seal Island Light-houses. Around it the depths soon increase from forty to forty-six, sixty and seventy fathoms." ***Grand Manan Bank.***

Off the southwestern end of Nova Scotia the water deepens rapidly,—fifty fathoms being found thirteen miles to the westward of **Frenchman's Point.** Between this part of the coast and the one hundred-fathom line is embraced what is known as Jones' Ground, a fine fishing-ground for codfish, etc. It extends, in Latitude from 43° to 44° 25′ N., and in Longitude from 66° 20′ to 67° **W.**; and affords fine fishing for the larger cod and halibut. ***Jones' Ground.***

GENERAL DIRECTIONS

FOR THE GUIDANCE OF VESSELS ENTERING THE BAY OF FUNDY.

"Ships navigating this bay have to encounter an atmosphere almost constantly enveloped in thick fog, tides setting with great rapidity over the rocks and shoals with which it abounds, and a difficulty of obtaining anchorage on account of the depth of water. Under these circumstances, the greatest care and coolness is requisite in order to prevent disaster."

The usual course pursued by vessels from Europe on approaching this dangerous bay with a westerly wind is, when off Cape Sable, to make the coast of Maine in the vicinity of the **Schoodic Hills** (which are on the eastern side of the entrance to Frenchman's Bay) or **Petit Manan Island,** (which

General Directions--Bay of Fundy.

lies off Gouldsboro' Bay.) The latter has a fine light-house on it. You can pass with greater safety to the westward of Grand Manan than to the eastward, and can have shelter, if necessary, in the many harbors on the coast of Maine.

"Between Grand Manan and the coast of Maine the passage is free from danger. Vessels beating through generally stand from side to side, particularly in fogs. The soundings vary from twelve to fifty fathoms. The shores on both sides are bold, and the tidal currents regular and strong." It may be well to remark, in this connection, that the fogs often hang close in with the Maine coast, between Machias Bay and West Quoddy Head,—extending like a wall about one-third of the way across the **Grand Manan Channel**, while the rest of the passage is entirely clear. Vessels which are clear of it, and are beating through, stand boldly up to the eastern edge of this fog, as though it were the coast-line, and go about as their jib-booms enter it. A vessel coasting to the eastward, and caught in one of these fogs close in with the shore, will often find it to her advantage to stand boldly over toward Grand Manan, when, in many cases, she will come out and find a clear channel to East Quoddy.

"When steering between Grand Manan and Bryer's Island, the utmost caution is requisite during thick weather, as vessels are frequently drawn among the islands and ledges to the southward of Manan by the flood, which sets directly on them. The most dangerous of these is *The Old Proprietor*, (see page 7,) which at low water is bare for the space of half an acre. When the wind, therefore, veers at all to the southward, you had better make for Eastport or St. John, or you may secure an anchorage in Grand Passage or St. Mary's Bay; for it seldom blows from the southward over eighteen hours without bringing on a fog."

The channel between Grand Manan and the coast of Maine is recommended as the best and safest passage up the Bay of Fundy. It is decidedly most advantageous with the prevailing winds, which are from the westward.

The direction of the winds here, and on the coast of Nova Scotia, is from **W SW.** to **SW.**, and they are nearly as steady as trade-winds; excepting that during the summer months they are rather more southerly, and accompanied, with little intermission, by fog. It is, therefore, recommended to vessels bound up either shore of the bay not to leave an anchorage without making arrangements for reaching another before dark or the approach of a fog. With a **SW.** wind it often happens that you are enveloped in it unawares. It is best not to keep at sea during night, if it can be avoided. With a **NW.** wind the fog is soon dispersed.

The tides are very rapid, but regular; and, although the wind against them alters the direction of the rippling and sometimes makes it dangerous, it has little or no effect upon the direction of their set. The flood sets from Cape Sable to the northwestward, through the **Seal Island** and **Bald Tusket** passages, at the rate of two or three knots, after which its rate increases to four or five knots. Thence it takes the direction of the shore and flows past Cape St. Mary, and then toward Bryer's Island. Between Bryer's Island and the opposite northern coast, and for some distance up the bay to the eastward, the first of the flood sets strongly to the northward, (nearly **N.**,) so that it is extremely dangerous for a vessel to run in the night, or during thick weather, from any port of the southern to the northern shore without making a large allowance for the set of the tidal current and *keeping the lead constantly going.*

GENERAL DIRECTIONS

FOR VESSELS LEAVING THE BAY OF FUNDY AND BOUND TO THE WESTWARD.

I. ***From West Quoddy Head to Penobscot Bay.***—When abreast of the light-house on West Quoddy Head, (bearing **NW.** by **N.**, five-eighths of a mile distant,) steer **SW. ¾ W.** until Little River Light-house bears **W. ½ N.**, about eight miles off; then steer **W.** by **S. ¾ S.** for Matinicus Rock; and when up with the rock follow the directions for Penobscot Bay.

The distance from West Quoddy Head to Matinicus Rock is about one hundred and four miles.

Or, when abreast of West Quoddy Head and about two miles off, steer **W SW.**, which will carry you safely along the coast, and you should make the rock to the northward of your course.

In sailing the above courses you will make and pass to the southward of the lights on Little River Island, Libbey Island, Head Harbor Island, Petit Manan, Baker's Island, and Saddle-Back Ledge; and to the northward of Machias Seal Island Light-houses and the light on Mount Desert Rock.

General Directions---Bay of Fundy to Boston.

II. ***From West Quoddy Head to Cape Elizabeth.***—Steer **W SW.** from abreast of West Quoddy Head until abreast of Matinicus Rock, and then **W.** ¾ **N.** for Cape Elizabeth. When within about five miles of the cape, follow the directions for approaching and entering Portland Harbor. Over these courses the distance from West Quoddy to Cape Elizabeth is one hundred and sixty-six miles. From Matinicus Rock to the cape is sixty-two miles.

In sailing the above courses you will make and pass to the southward of the following lights: Little River, Libbey Island, Head Harbor, Petit Manan, Baker's Island, Saddle-Back Ledge, Matinicus Rock, Monhegan, Seguin and Half-Way Rock; and to the northward of Machias Seal Island and Mount Desert Rock.

III. ***From West Quoddy Head to Cape Ann.***—From abreast of West Quoddy Head steer **W. SW.** for Cape Ann Light-houses. This course will pass about five miles to the southward of Matinicus Rock; and, if the course is made good, Thatcher's Island lights will be directly ahead. The whole distance is two hundred and four miles. After passing Matinicus Rock no lights will be seen until Cape Ann is made.

IV. ***From West Quoddy Head to Boston, outside of Mount Desert Rock.***—The course **SW.** by **W.** ¼ **W.** from Quoddy Head passes three miles outside of Mount Desert Rock. When abreast of it, steer **W.** by **S.** ⅞ **S.** for Boston; or **W.** by **S.** ¾ **S.** for Cape Ann. The distance from Quoddy Head to Mount Desert Rock is seventy-two miles, and from the rock to Boston one hundred and fifty-eight miles;—giving a total distance of two hundred and thirty miles.

On the above courses the following lights will be made and passed: Little River, Machias Seal Island, Libbey Island, Head Harbor Island, Mount Desert Rock, Thatcher's Island, Eastern Point, Baker's Island, (Salem Entrance,) Egg Rock, (Nahant,) Minot's Ledge and Boston.

On a clear night Matinicus Rock lights may possibly be seen, but the above courses pass thirteen miles to the southward of them.

V. ***From West Quoddy Head to Boston, inside of Mount Desert Rock.***—This is a very commonly used passage. It is usually adopted by vessels bound to Cape Ann, and the course is **W SW.** from Quoddy Head. When within two miles of the cape lights, steer **SW.** ¼ **W.** for Point Allerton, or **SW.** by **W.** for Long Island light; if bound in either by the Main Ship Channel or the Broad Sound Channels. The whole distance from West Quoddy Head to Boston is two hundred and twenty-five miles.

On the above courses the light-houses on the coast will be made and passed in the following order: Little River, Machias Seal Island, Libbey Island, Head Harbor Island, Petit Manan, Baker's Island, (Mount Desert,) Mount Desert Rock, Matinicus Rock, Thatcher's Island, Eastern Point, Baker's Island, (Salem Entrance,) and Egg Rock.

VI. ***From West Quoddy Head to Cape Cod.***—From the given position steer **SW.** by **W.** Southerly for Highland Light-house; which course passes outside of Mount Desert Rock and, if made good, brings you up with the light-house. The distance is two hundred and fifteen miles, and the following lights are passed in order: Little River, Machias Seal Island, Libbey Island, Head Harbor Island and Mount Desert Rock.

VII. ***From the Bay of Fundy to Penobscot Bay, passing between Grand Manan and Nova Scotia.***—When off the entrance to St. John Harbor, with Partridge Island Light-house bearing **N.** by **E.** ½ **E.**, five miles distant, and in twenty-two fathoms, steer **SW.** until Gannet Rock light bears **W.** by **N.** ½ **N.**, six miles distant, and then **W.** by **S.** ¼ **S.** for seventy-two miles, to Mount Desert Rock. Pass a couple of miles to the southward of this rock, and steer **W.** ½ **S.** until Matinicus Rock lights are made, when follow the directions given for Penobscot Bay. From Gannet Rock to Matinicus Rock the distance by the above courses is one hundred and seventy-eight miles.

VIII. ***Or, to pass through the Manan Channel between Grand Manan and the coast of Maine.***—From the position given above (off St. John) steer **W.** by **S.** ½ **S.** until abreast of West Quoddy Light-house, and then **W SW.** until up with Matinicus Rock. The whole distance is one hundred and forty-four miles. Between St. John and Matinicus you should make and pass the following lights: Point Lepreau, The Wolves, Swallow-Tail, East Quoddy, West Quoddy, Little River, Machias Seal Island, Libbey Island, Head Harbor, Petit Manan, Baker's Island and Mount Desert Rock.

IX. ***From the Bay of Fundy to Cape Ann, passing between Grand Manan and Nova Scotia.***—From off St. John, as above, steer **SW.** until Gannet Rock Light-house bears **W.** by **N.** ½ **N.**, distant

General Directions---Bay of Fundy to Boston.

six miles, and then W. by S. ¼ S. for Mount Desert Rock. When abreast of the rock, steer W. by S. ¾ S. for Cape Ann Light-houses. From St. John entrance to Gannet Rock is forty-six miles; from Gannet Rock to Mount Desert Rock is seventy-two miles; and from Mount Desert Rock to Cape Ann is one hundred and thirty miles. The whole distance from St. John to Cape Ann is two hundred and forty-one miles.

X. ***Or, to pass through the Manan Channel between Grand Manan and the coast of Maine and steer for Cape Ann.***—Steer W. by S. ½ S. until abreast of West Quoddy Head; then steer W SW., and follow the directions for vessels bound from West Quoddy to Cape Ann.

XI. ***From the Bay of Fundy to Boston.***—Steer SW. as before, from off St. John, until Gannet Rock light bears W. by N. ½ N., distant six miles, and then W. by S. ¾ S. for Boston. The distance from off Gannet Rock to Boston Entrance is about two hundred and twenty-seven miles.

Or, steer W. by S. ¼ S. from off Gannet Rock for Mount Desert Rock, and when abreast of it steer W SW. for Boston.

Or, when abreast of Mount Desert Rock steer W. by S. ¾ S. for Cape Ann, and, when abreast of the lights, SW. ¼ W. for Point Allerton, or SW. by W. for Long Island Light-house.

XII. ***From the Bay of Fundy to Cape Cod.***—The direct course from the position given above (six miles E. by S. ½ S. from Gannet Rock) leads directly over *Ammen's Rock* on Cashe's Ledge. To avoid this rock, steer from the above position SW. by W. ¾ W. for one hundred and thirty-four miles. When past Cashe's Ledge, steer SW. by W. for Highland Light-house, which you will make a little to the westward of the course. From Gannet Rock to Cape Ann the distance in a straight line is two hundred and eleven miles, and from Cape Ann to Cape Cod (abreast of the Highlands) forty-two miles.

Vessels using the Manan Channel must steer W. by S. ½ S. until abreast of West Quoddy light, and then follow the directions for sailing between West Quoddy and Cape Cod.

The above sailing directions give only outside courses. Coasting vessels rarely follow them, but use the inshore passages among the islands which fringe the coast of Maine. For coasting directions see descriptions and sailing lines between West Quoddy Head and the various harbors on the coast of Maine, given in another part of this volume.

GENERAL DIRECTIONS

FOR VESSELS LEAVING CAPE SABLE AND BOUND TO THE WESTWARD.

I. ***From Cape Sable to West Quoddy Head.***—When abreast of Seal Island Light-house, bearing NE. by E. ½ E., and about five miles distant, steer N NW. for Libbey Island Light-house. The distance between the two is ninety miles. On this course, when Machias Seal Island lights bear E. ¾ S. and you are about six miles from Libbey Island, steer NE. by E., twenty-four miles, through the Manan Channel. This will bring you up with the head. It is not considered safe for strangers to attempt the passage between Grand Manan and Nova Scotia; but the following courses are given:

II. ***From Cape Sable to East Quoddy Head, outside of Grand Manan.***—When abreast of Seal Island, as before, steer N NW. forty-eight miles, and then NE. by N. ¾ N. On this last course Gannet Rock light will be made to the northward, nearly seven miles distant. Swallow-tail light will also be made on the port bow, and the course passes eight miles to the eastward of it. When past the Swallow-tail, steer NW. ¾ W. for East Quoddy.

But, it must be borne in mind that this passage, owing to the velocity and conflicting nature of the currents, the frequent fogs and many dangerous obstructions, is in the highest degree unsafe for strangers. To such it is recommended to use the Manan Channel, between Grand Manan and the coast of Maine, following the directions given above, and on the preceding page. In this connection see also the General Remarks on page 10.

III. ***From Cape Sable to Penobscot Bay.***—Vessels from Europe bound to Penobscot Bay should make Matinicus Rock light. In fine weather they may safely pass between Seal Island and Pollock Rip by following these directions: When Cape Sable light bears N., distant seven miles, steer W. by N. ½ N. until Seal Island light bears NE. by E. ½ E., nine miles distant; when NW. by W. ½ W. will bring you up with Matinicus Rock. The whole distance is one hundred and forty-four miles.

Or, when Cape Sable light bears NE. by N. ½ N., distant eleven miles, steer NW. by W. ½ W., which course will make the lights on Matinicus Rock.

In heavy weather, to pass outside of Pollock Rip and steer for Penobscot Bay.— When Cape Sable light bears **N.**, eleven miles distant, steer **W.** by **N.** thirty-three miles, which clears the Rip; then steer **NW.** by **W.** for Matinicus Rock. ***General Directions---Cape Sable to the Westward.***

IV. ***From Cape Sable to Cape Elizabeth.***—The bearing of Cape Elizabeth lights from the light on Cape Sable is **W.** by **N.** ¾ **N.**; but this course cannot be steered. If intending to go inside of Pollock Rip you should, when Cape Sable Light-house bears **N.**, distant seven miles, steer **W NW. Westerly,** which will carry you up to the lights.

Or, to pass to the southward of the Rip; when Cape Sable bears **N.**, distant eleven miles, steer **W.** by **N.** as before, and continue this course forty-five miles; then steer **NW.** by **W.** ¾ **W.** for the cape lights. The whole distance is a little over two hundred miles.

V. ***From Cape Sable to Cape Ann.***—When Cape Sable light bears **N.**, seven miles distant, steer **W.** ¼ **N.** fifty miles, until past Cashe's Ledge, and then **W.** by **N.** ¼ **N.** for the cape lights. The whole distance by these courses is two hundred and twenty-two miles. The direct course from light to light leads directly over *Ammen's Rock*, and the courses above given are laid to avoid it.

VI. ***From Cape Sable to Boston.***—With Cape Sable light bearing **N.**, distant seven miles, steer **W.** ¼ **N.** two hundred and forty miles, which will make Boston Light-house. Or, follow the course for Cape Ann, and when off that cape steer **SW.** ¼ **W.** for Point Allerton, or **SW.** by **W.** for Long Island light.

VII. ***From Cape Sable to Cape Cod.***—When Cape Sable light bears **N.**, distant seven miles, steer **W.** ½ **S.**, which course, if made good, passes a little to the southward of the light, which will be made to the northwestward. The whole distance is two hundred and twelve miles. (See also pages 1 and 4–5) for references to Cashe's Ledge and Jeffrey's Ledge, on the courses of vessels bound from Cape Sable to Boston and Cape Ann.

CURRENTS

BETWEEN CAPE SABLE AND CAPE COD.

The necessity for reliable information upon this subject has long been impressed upon navigators; and in 1877, the Superintendent of the U. S. Coast Survey directed Master Robert Platt, U. S. N., to proceed in the schooner "Drift" (a vessel built and specially fitted for the purpose) to the Gulf of Maine, and make a full series of close observations on the direction and velocity of the currents, especially in the channel south of The Georges. Captain Platt's observations, which were copious and thorough, and made with the aid of the most modern appliances for Current observations, were reduced and discussed by Prof. Henry Mitchell, Assistant U. S. Coast Survey, and the results of his discussion are given below in the following abstract from a "Notice to Mariners," published by the Coast Survey March 7, 1878.

"The simplest statement that can be made respecting these currents is" embodied in "the following General Rule:

"Between Nantucket Shoals and Cape Sable the ebb current runs to the southward during the first four and a half hours after the southing or northing of the moon. The average rate of the current each way over the entire distance is one knot an hour, but is unequally distributed,—being greater than one knot over shallow ground and less through the deep channels. The time of turning on George's Bank corresponds nearly with the time of high and low water at Boston and Portland; but in the channel to the westward of the bank it is later, and in that to the eastward earlier, by about half an hour.

"The following table gives the directions and rates of the tidal currents for four divisions of the belt examined between Nantucket Shoals and Cape Sable:

TABLE I.

Locality of Station.	Time of turning after Moon's Transit.		First Quarter.		Greatest—				Third Quarter.		Remarks.
	Flood to Ebb.	Ebb to Flood.	Set.	Drift.	Time after Moon's Transit.		Set.	Drift.	Set.	Drift.	
	h. m.	h. m.		Knots.	h. m.	h. m.		Knots.		Knots.	
Great South Channel, (between Nantucket Shoals and George's Bank.)	11 55	.....	S. ½ W.....	0.94	2 37	.....	S. by W. ½ W.	1.30	W SW.....	0.94	Ebb.
	.....	5 37	N. ¼ W.....	1.02	.....	8 43	N. ¼ W.....	1.41	N. by W.	0.85	Flood.
George's Bank, (Southern Slope.)	11 19	.....	SE.....	1.60	2 1	.....	S. ¼ E.....	1.90	S SW.....	1.40	Ebb.
	.....	5 7	NW. ¼ W.....	1.60	.....	8 13	N. by W. ...	1.90	NE.....	1.40	Flood.
Great Eastern Chan'l, (between George's Bank and Brown's Bank.)	11 14	.....	SE.....	1.00	1 56	.....	S. ¼ E.	1.40	S SW.....	1.20	Ebb.
	.....	5 2	NW. ¼ W.....	1.10	.....	8 8	N NW.	1.30	N. ¼ E.	1.00	Flood.
Northern Channel, (between Brown's Bank and Cape Sable Bank.)	10 50	.....	SE.....	1.25	1 32	.....	SE. ½ S.....	1.27	S. by E.	1.00	Ebb.
	.....	4 38	W. by N.	1.00	.....	7 44	NW. by W...	1.38	W NW.....	1.00	Flood.

Currents in Gulf of Maine.

"The times given in the above table are subject to variations of twenty-two minutes each way, and the velocities of the currents to variations up to one-fifth, by reason of the tidal inequalities.

"If the navigator has the '**Tide Tables for the Atlantic Coast**,' issued from the U. S. Coast Survey Office, and in which high water for Boston is given for every civil day of the year, the following table will be more convenient and accurate in practical use, since no corrections of time are required for the tidal inequalities. In this table the hours at the heads of the columns are tidal hours, or twelfths of the time between any two following high waters,—one high water being assumed to occur at **0 h.**, the next at **12 h.** The rates given are those for an ordinary tide of 9.8 feet range at Boston, and must be increased or diminished with the tide from neap to spring, and from spring to neap:

TABLE II.

RATE AND DIRECTION OF CURRENT FOR EACH TIDAL HOUR AFTER TIME OF HIGH WATER AT BOSTON.

Locality.	0h		Ih		IIh		IIIh	
	Rate, Knots.	Direction.	Rate, Knots.	Direction.	Rate, Knots.	Direction.	Rate, Knots.	Direction.
Great South Channel*	0.3	NE. by N.	0.6	SE. by E. ½ E.	1.0	S. ½ W.	1.3	S. by W. ½ W.
George's Bank	0.8	E.	1.5	SE.	1.8	S SE.	1.9	S. by W.
Great Eastern Channel	0.6	E. by S.	0.9	SE.	1.3	S SE.	1.4	S. ½ E.
Northern Channel	0.7	E. by N.	1.2	SE.	1.3	SE. ½ S.	1.2	SE. by S. ½ S.
	IVh		Vh		VIh		VIIh	
Great South Channel*	1.2	S. by W. ½ W.	0.9	S. by W. ½ W.	0.3	SW. ½ S.	0.5	NW. by W.
George's Bank	1.6	SW.	1.2	SW.	0.8	W. by S.	1.4	NW. by W.
Great Eastern Channel	1.3	SW.	1.0	SW.	0.3	W SW.	1.0	NW. by W.
Northern Channel	1.0	S. by E.	0.6	S.	0.3	W. by S.	0.9	W. by N.
	VIIIh		IXh		Xh		XIh	
Great South Channel*	1.0	N. ½ W.	1.3	N. ½ W.	1.3	N. ½ W.	0.9	N. ½ W.
George's Bank	1.7	NW. by N.	1.8	N. by E.	1.6	N NE.	1.2	NE. by E.
Great Eastern Channel	1.2	NW. ½ N.	1.3	N NW.	1.2	N. by E.	0.7	NE.
Northern Channel	1.3	NW. by W.	1.1	NW. by W.	0.9	N NW.	0.5	N. by E.

The importance of a knowledge of the times and direction of the currents in this vicinity cannot be overestimated; and in his report to the Superintendent of the Coast Survey, Master Platt gives an example of the advantage possessed by knowledge over ignorance. He says:

"We saw a brig trying to work to the northward, and she remained in sight for thirty-six hours,—having unfortunately tacked every time just when she should not. Her master evidently did not know anything about the set of the currents, or he would have soon worked out of sight. On the other hand, we, who were familiar with the set and drift, worked from Station No. III to No. IV—a distance of twenty-four miles—in two tacks, with the wind dead ahead."

PASSAMAQUODDY BAY.

This is a large and deep bay of irregular shape, lying between the province of New Brunswick and the State of Maine, and receives the waters of several rivers, the principal of which is the St. Croix. The bay lies **NE.** and **SW.**, is bounded on the north and northeast by the shores of New Brunswick, on the south by Deer Island, and on the west by the State of Maine. It is about ten miles long, and varies in width from three to five miles. Deer Island separates it from **Friar's Roads**, (the summer harbor of Eastport;) and between that island and Campobello Island leads the principal entrance to the bay. There is another channel leading between the northeastern end of Deer Island and the New Brunswick shore, which is called the **Letite Passage**; but, though more direct, it is neither so wide nor so deep as the main channel.

The St. Croix River, forming part of the boundary between the United States and the British Possessions, runs in a northerly direction for thirteen miles to the town of **Calais**, which stands on its western bank. This town is the principal centre of the lumber-trade, and ships annually many millions of feet of all kinds of dressed and undressed lumber.

Beside Deer Island, several other islands lie off the mouth of Passamaquoddy Bay. Of these, the principal are Campobello Island, (belonging to Great Britain,) which lies just to the southward of Deer Island and forms the shelter to Friar's Roads from easterly winds; and Moose Island, (belonging to the United States,) on which is situated the town of Eastport. There are also many smaller islands, which will be described in place.

*Channel between The Georges and Nantucket Shoals.

Campobello Island is nearly eight miles long, and about two miles and a half wide at its widest part, (which is opposite Eastport.) It lies in a **NE.** by **N.** and **SW.** by **S.** direction, forming the eastern shores of the harbor of Eastport. Its extreme southern end, called **Liberty Point,** is a round, rocky head of peculiar appearance, (in reality a small island,) lying about fifty yards from shore, and is tolerably bold. The land behind it rises to a considerable height and is well wooded.

Campobello Island.

The northern point of Campobello Island, called **East Quoddy Head,** is a high bluff head-land, and runs off into a long point, from which extend in a line a number of rocky islets for the space of half a mile in an **E.** by **N.** direction. Near the extreme eastern point of the island is built the light-house, which is called **East Quoddy Light-house,** a white tower, showing a fixed white light from a height of sixty-four feet above the sea. Its geographical position is

Latitude ..... **44° 57′ 28″ N.**
Longitude ..... **66° 54′ 00″ W.**

Head Harbor.

Vessels bound into Eastport by the main or middle passage pass to the northward of this light-house, and may go within a cable's length of it with safety; but vessels bound into Head Harbor by the northern entrance leave it to the northward, and pass between the head and Head Harbor Island. This entrance to Head Harbor lies between the light-house and the northern shores of that island, is a quarter of a mile wide, and has deep water and good holding-ground. The southern entrance leads along the southern and western shores of Head Harbor Island, between them and the eastern shore of Campobello; and is not safe. From East Quoddy Light-house

	Miles.
Fish Head (the easternmost point of Grand Manan) bears S. by E. ½ E.	13
The southernmost of The Wolves E SE.	7
The northernmost of The Wolves E. ½ S.	nearly 8
Point Lepreau E. ½ N.	19½
Entrance to Beaver Harbor E. by N. ½ N.	18
The top of White Horse Island NE.	about 3
Spruce Island between N. by W. ½ W. and NE. by E. ½ E.	nearly 1
Black Rock NW. by W. ½ W.	⅞
Casco Island W. ½ N.	1¼

Head Harbor Island.

Head Harbor Island is a high, woody island, which lies a quarter of a mile **SSW.** from East Quoddy Light-house and the same distance from the east shore of Campobello. It is of irregular shape, lies nearly **N.** and **S.**, and is about half a mile long. With Quoddy Head and the eastern shores of Campobello it forms a good harbor of refuge, called Head Harbor, with from four to ten fathoms of water.

On the eastern shore of Campobello, a little over three-quarters of a mile below Head Harbor, is **Mill Cove,** a wide and deep cove, affording shelter in westerly winds, but obstructed by *a three feet rock nearly in the middle of the entrance.* It has from three to six fathoms at the anchorage.

Scott Head.

All the eastern shores of Campobello are high, bold, rocky and wooded. The settlements are on the western shores, opposite Eastport and Lubec. Scott Head, nearly two miles and three-quarters below East Quoddy Head, is a high, woody hill, bold and steep-to, with black, water-worn, rocky cliffs to seaward. Three-quarters of a mile below this head is **Schooner Cove,** a small cove, with six fathoms at the anchorage, and affording shelter in west and northwest winds.

Herring Bay Head.

Two and a third miles **SW.** of Scott Head, and nearly three miles **NE.** of Liberty Point, is Herring Bay Head, the northern headland of a large and wide bay, called **Herring Bay.** The head is bluff, steep, and crowned with spruce and fir; and the bay is a mile and a quarter wide, and makes in for over half a mile, with good water. It affords good shelter in northerly winds, but is open to seaward. Vessels may anchor in from two to eight fathoms, according to draught.

Owen's Head is half a mile **NE.** from Liberty Point; and is the high wooded land which shows over Liberty Point when viewed from the southward. In fact, all of this coast is bold, rocky and wooded.

On the western side of Campbello Island the first point of any importance below East Quoddy Head is **Windmill Point.** This is a long point, two miles and a half **W SW.** from East Quoddy Light-house, and forms the northern point of entrance to a very capacious and well-sheltered harbor, called Harbor de Lute. It is of moderate height, steep and bold-to, and is crowned with scrubby trees and bushes.

Harbor de Lute.

Harbor de Lute is an excellent harbor, much used by coasters;—having good water, and being completely sheltered from all winds. Its entrance, between Windmill Point and Bald Head, is seven-eighths of a mile wide and entirely unobstructed. The arm of the bay which forms the harbor runs to the southward well up into the land, and in all winds affords excellent anchorage.

Bald Head, the southern point of the entrance to Harbor de Lute, is a high, precipitous, rocky head, with a few stunted firs dotting its surface. It is very bold, having five fathoms close to the shore. One mile and an eighth below it we come to a low, rocky point, covered with a thick growth of spruce and fir. This is **Deer Point,** the northern point of entrance to Friar's Bay. Just to the northward of it is the settlement of **Dunn's Beach,** and just to the southward, on the north shores of Friar's Bay, is the village of **Welchpool.**

Friar's Bay is a mile wide, and forms an excellent anchorage with a depth of from four to ten fathoms. On the north shore is the English settlement of Welchpool. Friar's Head, the southeastern headland of this bay, is a high hill, presenting a precipitous, rocky face to the northward and eastward, but sloping gently away to the southward to the water's edge. The surface is grassy, with two or three fir trees at wide intervals dotting its surface and a few clinging to the brink of the precipice. At the bottom of this precipice, on the north side, stands a very peculiar looking gray rock, from which the head takes its name. It formerly bore a slight resemblance to the figure of a man wearing a hood, and was called, as now, **The Friar.** The name remains; but a shot from Fort Sullivan having knocked the top from the rock, what remains, though sufficiently remarkable, bears little resemblance to a friar. At the southern edge of the hill is a group of houses. Friar's Head, like all of the headlands of Campobello, is very bold-to.

Friar's Head.

On the south side of this head is **Snug Cove**, a small and shallow cove of little importance. Both this cove and Friar's Bay have shingly beaches.

Half a mile below Snug Cove is Mehollan Point, a long, grassy point of moderate height, presenting sandy, water-worn faces to the southward and westward; and having groups of houses upon it. It is the eastern point of the entrance to Lubec Narrows from the northward. A few hundred yards to the southward of it is **Charley's Point**, a low, grassy point, with sandy faces, fenced to the edge of the water. It is fertile and under cultivation, and groups of houses occupy its higher slopes. Indeed, nearly all of the western shores of Campobello are fertile, thickly settled, and present during the summer a beautiful appearance.

Mehollan Point.

On the southern side of Charley's Point makes in a large but shallow cove, called **Deep Cove**, which extends to the southward nearly a mile, to a moderately high, steep and almost entirely bare point, called Cranberry Point. There are one or two dwellings on its higher grounds, and a couple of fish-houses on the shore at its base. On its southeastern side is a shallow cove, called **Little Duck Pond**, off the mouth of which lie a number of islets, called **Duck Islands**, with ledges extending in a southerly direction for a quarter of a mile. At low water it is bare from Little Duck Pond to these ledges, a distance of half a mile. Duck Islands are small, rocky, crowned with a sparse growth of stunted fir and surrounded by fish-weirs.

Cranberry Point.

Half a mile to the southward of Little Duck Pond is a long, low, rocky point, called Duck Point, separating Little Duck Pond from **Great Duck Pond**, a large but shallow cove, full of shoals, making into the southern shores of Campobello west of Liberty Point. This cove is nearly a mile wide and half a mile long. Duck Point is shoal in its approaches,—the dry flats and ledges extending from it nearly six hundred yards. In fact, all of the southern shore of Campobello is very shoal;—a very narrow channel, with about five feet at low water, being the deepest from Quoddy Head through The Narrows.

Duck Point.

Deer Island. Deer Island is, next to Campobello, the largest in Passamaquoddy Bay,—being about six miles long and three broad in its broadest part. It extends in a **NE.** and **SW.** direction nearly across the whole width of the bay, (protecting it from southerly winds,) and lies a little to the northward and a mile and three-quarters to the westward of Campobello. Between this island and Campobello lies the main entrance to Eastport Harbor and Passamaquoddy Bay.

Deer Island is irregular in shape, with many curves and indentations on its western shore. Its southern point, called Deer Point or **Deer Island Point**, is a long, narrow and rocky projection, low and bare of trees, which extends to the southward to within half a mile of Moose Island. It is very bold, but vessels dare not approach it on the flood-tide, as the tidal current from the main channel, meeting that which comes up through Friar's Roads from The Narrows, causes a whirlpool of such strength as to sink small boats and turn a vessel of one hundred tons completely around.

Deer Point.

The shores of Deer Island are generally high and rocky. The surface is diversified with high hills, (sometimes wooded and sometimes barren,) and fertile, cultivated valleys between them, and is pretty thickly settled. Its western shores only will be described, the eastern coast not coming within the province of this work. Off its northern end lie a number of islets, which form, with the eastern coast, the channel into Passamaquoddy Bay and the St. Croix River, called the **Letite Passage.**

On the western shore, about a mile and a half above Deer Point, is a fine cove with a smooth beach, called Cummins' Cove, which affords good anchorage in from two to three fathoms to vessels caught by adverse winds or tides. The entrance is clear, there being no ledges or shoals in the way. This cove may be recognized by the large sand cliff on its northern side, with a few firs clinging to its perpendicular face, behind which is a high, steep, rocky head crowned with fir, but bare of all other growth, the surface being mostly bare rock. The shores of the cove are nearly level and well cultivated, and there is here a small settlement.

Cummins' Cove.

Cummins' Head is a high, steep, rocky head, with stunted firs dotting its surface and sides, and is just above the north point of the entrance to Cummins' Cove.

Clam Cove is the next above Cummins' Cove, from which it is a little over a mile distant. It is large,—affording secure anchorage in from two to three fathoms, sheltered from all winds, and is an excellent winter harbor. Its northern point is a rocky, wooded head, bold-to, and covered with scrubby fir, called **Clam Cove Head**, and forms the northwestern extremity of Deer Island.

Beyond Clam Cove Head is **Northwest Head**, on the northern side of which is an excellent anchorage with water sufficient for large vessels, called Northwest Harbor, and which affords shelter in all winds. It lies on the north shore of Deer Island, and is the only shelter on that side until you come to the northeast point, where a cove is formed between **Northeast Head** and **Pendleton Island**,—a small island lying to the northward of the head. The bottom is rocky, however; and it is not so good an anchorage as may be found at Northwest Harbor. Pendleton Island is nearly two hundred feet high near its southern end; Northeast Head is two hundred and fifty feet; and the highest head south of Clam Cove (between it and Deer Point) is three hundred feet. **Northwest Harbor.**

The eastern shores of Deer Island are high, steep and rocky, and are covered with a scattered growth of fir and spruce.

Moose Island, which belongs to the United States, lies to the southwestward of Deer Island and to the westward of Campobello. Between the latter and Moose Island is the large roadstead known as **Friar's Roads**, the summer harbor of Eastport, and between Moose and Deer islands lies the entrance to the **Deer Island** or **Western Passage** into Passamaquoddy Bay and the St. Croix River. **Moose Island.**

Moose Island lies **N NW.** and **S SE.**, is about three miles long and of a very irregular shape,—its western shores being very much cut up by large coves and indentations, and its eastern shore also somewhat indented. The town of **Eastport**, the most easterly settlement in the United States, occupies its southeastern end. Its northern end is called **Kendall's Head**, and is a high, bare hill, fringed with a thick growth of scrubby spruce and fir at its eastern end, where it shows a sandy, water-worn face of considerable height, and ends in a low, rocky and wooded point. A narrow and very shallow passage leads between the northern shore of Moose Island and the mainland into Cobscook Bay and Pembroke River. It is crossed by a bridge which connects the island with the mainland.

Just to the southward of Kendall's Head is **Johnson's Cove**, a large and deep cove, affording excellent anchorage, free from the strong currents of the roadstead. It has a smooth, handsome beach, and the land at its head is low, smooth and cultivated. Good anchorage is had in this cove in seven fathoms.

Todd's Head, the most easterly point of Moose Island, lies a mile and a half below Kendall's Head, and is part of the town of Eastport. It is a bluff, precipitous, rocky head, about thirty feet high, with an earthwork just back of it.

Dog Island lies a little to the northward of Todd's Head, just to the southward of Johnson's Cove, and is a rocky islet, bare of trees, but with a few scrubby bushes upon it. The high land behind it, which forms the southern end of Johnson's Cove, appears as a high, sandy bluff fringed with birch, and having its slopes covered with small fir and spruce. **Dog Island.**

The southern point of Moose Island, called **Estes' Head**, is a bluff, rocky headland, having its summit crowned with small fir. About a mile to the northward of it, on the eastern shore of Broad Cove, is a low, rocky point, with a few trees on the back part, called **Stanel Point.** High land rises behind it, and about three-quarters of a mile to the westward of it is a large, high and bluff head, with its summit covered with stunted fir, and called **Shackford's Head.** On its south side this head shows a low, water-worn face, and between it and Estes' Head lies Broad Cove, the real harbor of Eastport.

Broad Cove is a large and deep cove, almost entirely unobstructed, and affording excellent anchorage, with good holding-ground, in all winds and at all seasons of the year, and sufficient water to float the largest vessels. It is very commodious and safe, and a stranger may enter at any time. **Broad Cove.**

On the north side of Shackford's Head makes in a deep bight, known as **Deep Cove**, which is, however, of but little importance. Hence, to the northern end of the island, the western shore is deeply indented by large but shallow coves, also of little importance. The passage between Moose Island and the mainland is dry at low water, and navigation is closed by a large covered bridge, painted white, which connects Eastport with the town of **Perry**, on the main. This is called **Eastport Bridge.**

To the westward of Moose Island the great **Cobscook Bay** makes into the land, receiving the waters of the **Pembroke** and **Cobscook** rivers, which, with their several branches, penetrate the land for fifteen or sixteen miles in every direction, and lead to the towns of **Pembroke, Dennysville** and **Whiting.** These rivers are shoal and the navigation dangerous without an experienced pilot. They will be described in their proper places.

Indian Island is of moderate height, and lies off the southeastern end of Deer Island, and about half a mile to the southeastward of Deer Point. It lies **N NE.** and **S SW.**; is about a mile long, and thickly settled. Its northern end is covered with a growth of spruce and fir trees, but the rest of the island is grassy, and in some places cultivated. There is a small grassy island, with two houses on it, close to its southern end. **Indian Island.**

The channel between Indian Island and Deer Island is called **Indian River.** There is not less than eleven fathoms through it, and it is almost entirely unobstructed; but the tidal current runs with great velocity, and it is not safe for strangers to try this passage on account of the dangerous whirls off Deer Point.

Besides the St. Croix River, several streams flow into the northern part of Passamaquoddy Bay. Of these the most important is the **Magaguadavic**, which drains the land from **Lake Utopia** (whose outlet it is) to the bay. There is considerable trade to this river. (For description of this portion of Passamaquoddy Bay see the book of Sailing Directions accompanying the charts of the British Admiralty.)

EASTPORT HARBOR.

This commodious and excellent harbor is situated at the southern end of Passamaquoddy Bay. It has two entrances;—the *main passage lying between Campobello and Deer Island, and the southern (through Lubec Narrows) opening between the* southern end of Campobello and West Quoddy Head, the easternmost point of the seacoast of Maine. The latter entrance is, however, fit only for light-draught vessels. The light-house which marks the main entrance to Eastport Harbor is situated on East Quoddy Head, which is the northern point of Campobello Island, and appears as a high, bluff headland, running off into a long point, from which extend a number of rocky islets in an E. by N. direction for nearly half a mile. Near the extreme eastern point of the outer island is built the light-house, which is called East Quoddy Light-house. It is a white, hexagonal tower, thirty-four feet high, is surmounted by a red lantern, and shows a fixed white light from a height of sixty-four feet above the sea, visible fifteen miles. Its geographical position is

East Quoddy Head and Light-house.

Latitude	**44° 57′ 28″ N.**
Longitude	**66° 54′ 0″ W.**

The keeper's house stands back of the light-house, and is painted white; and a flag-staff, upon which is shown the red ensign of England, appears behind the house.

West Quoddy Head, upon which is built the light-house marking the southern entrance to Eastport Harbor, is high and wooded; but the light-house is located on a plateau much lower than the summit, bare of trees, and presenting cliff-like faces to seaward. Two bare reefs of rocks lie off the point. West Quoddy Light-house is a brick tower, painted red and white in horizontal stripes. The keeper's dwelling is a white building connected with the tower, and a wooden building in front of the light-house contains the apparatus for sounding a steam-whistle. The light-tower is fifty-five feet high, and shows a fixed white light, of the third order of Fresnel, from a height of one hundred and thirty-three feet above the sea. The geographical position is

West Quoddy Head and Light-house.

Latitude	**44° 48′ 54″ N.**
Longitude	**66° 57′ 1″ W.**

Fog-signal. A steam-whistle is sounded in foggy weather, giving blasts of eight seconds' duration at intervals of fifty-two seconds.

The southern entrance to Eastport leads between West Quoddy Head and Liberty Point, the southernmost point of Campobello. The channel is narrow and full of shoals, and at The Narrows opposite Lubec the whole passage is but a little over one-eighth of a mile wide. Not more than five feet can be carried through this channel at low water. It is therefore only used by large vessels at the top of the tide.

The summer harbor of Eastport is known as Friar's Roads, and is situated between Campobello Island and Moose Island, upon which is built the town of Eastport. It is sufficiently safe in summer weather and very commodious, but the water is very deep, (from twelve to fifty fathoms,) except close to the shores, and the tides run with considerable velocity. It is also exposed to the NE. winds which sweep down the open passage between Deer Island and Campobello Island; and in a gale, the Roads are untenable. In such cases, and in winter weather, vessels make **Broad Cove**, which lies on the south side of Moose Island and forms the real harbor of Eastport. It is a large and deep cove, affording excellent anchorage, with good holding-ground in all winds and in all seasons of the year; and is very commodious and safe,—strangers being able to enter at any time.

Friar's Roads.

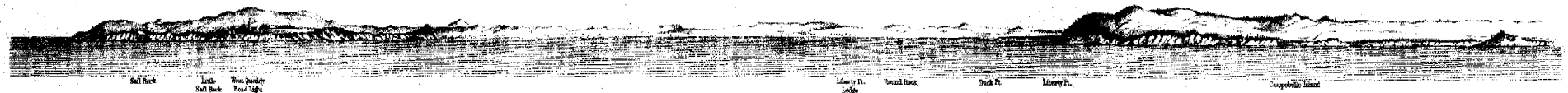
In approaching Eastport Harbor from the eastward, and intending to enter by the Main Channel, the first prominent objects visible are three or four islands known as The Wolves. These are rocky islets from sixty to one hundred feet in height, and covered with spruce trees, situated about eight miles to the eastward of East Quoddy Head, and about five miles to the southward of **Etang Harbor**, on the coast of New Brunswick. They are very dangerous, although bold-to, and are especially dreaded by vessels bound to and from St. John and other ports in the Bay of Fundy in thick weather.

The Wolves.

Wolves Light-house. To assist navigation as much as possible, a light-house has been placed on the southernmost of The Wolves, and shows a revolving white light from a height of one hundred and eleven feet above the sea. It revolves once in a minute and a half, and is visible in clear weather sixteen miles. It is not safe to pass between The Wolves even in fair weather, as there are many rocks and shoals in the passage, and the currents are dangerous.

From the light-house

	Miles.
The entrance to St. John Harbor bears E. ½ N.	**about 30**
Point Lepreau E. by N. ¼ N.	**13¼**
The entrance to Beaver Harbor N. by E. ½ E.	**nearly 7**
The entrance to Etang Harbor N. by W. ¼ W.	**6¼**
The light-house at the entrance to Bliss' Harbor (on the N. side of Letite Passage) NW. by N. ½ N.	**7**
The White Horse NW. ¼ N.	**6¼**
East Quoddy Head Light-house NW. by W. ½ W.	**a little over 7**
Bishop's Head, or Long Eddy Point, (the N. end of Grand Manan) SW. by S. ¼ S.	**8¾**
Swallow-tail Light-house S. by W. ¼ W.	**10¼**



Approaches to Eastport from the Westward through Lubec Narrows, West Quoddy Head Lt.Ho bearing W. ¼ N. distant 2¼ Miles.



Approaches to Eastport by the Main Channel, East Quoddy Lt.Ho. bearing E. ¼ N. distant 3¼ Miles.



The Wolves, from the Westward, Lt.Ho. on West Wolf bearing S.E. ¼ S. distant 2¼ Miles.

From the north end of the northernmost of The Wolves

		Miles.
The entrance to St. John Harbor bears E.	**about**	26
Point Lepreau E. ¼ N.		11
The entrance to Beaver Harbor N.		4½
The entrance to Etang Harbor NW. ¼ N.		5½
The middle of Letite Passage NW. by W. ⅝ W.		7
The White Horse W. by N. ⅝ N.	**a little over**	7
East Quoddy Head Light-house W. ½ N.	**nearly**	9
Bishop's Head SW. ⅞ S.		11½
Swallow-tail Light-house SW. by S. ⅝ S.	**a little over**	13

After passing The Wolves the shores of Campobello will appear high, bluff, rocky and wooded. On approaching the island, East Quoddy Head will appear to the westward; and to the northwestward a high, bluff, rocky islet, entirely destitute of trees, and which will show as a white rock, owing to a peculiar white place near its southwestern end. This is The White Horse, one of the most remarkable land-marks in this vicinity. It bears from the light on The Wolves **NW. ½ N.**, six and a half miles distant, and from East Quoddy Light-house **NE. ¼ E.**, about two and a half miles distant; **The White Horse.** and cannot be mistaken,—being bare of trees, while all the islets about it are covered with them. It therefore serves as an excellent land-mark for both this and the Letite Passage. The water is deep on its southern and western sides, but to the eastward lies *East Rock*, with one foot at low water, about two hundred yards from the eastern end of the island. East Quoddy Light-house open to the northward of The White Horse clears East Rock on its north side, and White Island open to the southward of The White Horse clears the danger on its southern side.

North Rock, with one foot of water, lies **N. ⅝ W.**, half a mile from the western end of The White Horse, and has deep water close-to all around it.

East Quoddy Head is rocky, precipitous, and covered with a stunted growth of fir and spruce. The light-house, a conspicuous object, is built upon a rocky islet just clear of the head, and about thirty feet high. The tower being thirty-four feet in height, the light is therefore shown from a height of sixty-four feet above the sea, and is fixed white, visible fifteen miles. Leave it to the southward, and a number of small islets on the starboard hand or to the northward, and steer a course about **SW.**, hugging the Campobello shore. Of these small islands **Spruce Island** is the southernmost as we pass Quoddy Head. It is a small rocky islet covered with a stunted growth of spruce. **White Island**, which lies about half a mile to the northward of it, is also of moderate height and covered with a thick growth of stunted spruce. **Sand Island**, lying to the westward of Spruce Island and close to it, is a low sandy islet nearly bare, but having one or two houses upon it.

Passing to the southwestward, after rounding Quoddy Head, there will be seen to the westward, about **Casco Island.** a mile off, a rocky island covered with a growth of small fir and spruce, and called Casco Island. Seen from the eastward it appears as a high, bare, rocky and precipitous head of peculiar shape; but its southwestern end is low and sandy. This island is very bold-to on its northern and southern sides, seventeen fathoms being found within one hundred yards of its shores. There are, however, *two detached ledges* nearly equidistant from the western end of the island and close to it; and to clear them to the westward the rule is to bring the centre of The White Horse between Spruce and Sandy islands. *Gull Rock*, also, (see page 20,) lies half a mile **E. by N. ¼ N.** from its northeastern point, and there is *a rocky ledge* inshore of that.

Before rounding East Quoddy Head there appears to be no passage open except the Letite Passage,—all progress being apparently shut off by the high, bluff, rocky shores of Deer Island, which, with the islands of **Pendleton** and **Macmaster** on the north, and Moose Island and Indian Island on the south, nearly shut off all ingress to Passamaquoddy Bay. The eastern shores of Deer Island are covered with a scattered growth of stunted fir and spruce. After rounding East Quoddy Head you will immediately open the entrance to Friar's Roads, and the city of Eastport will appear directly ahead; Indian Island will appear to the westward, and the course leads directly for the city. On this course you will **Wilson's Head.** first pass, on the Campobello side, a bluff, precipitous head, whose summit is covered with grass and its sides clothed with stunted fir clinging to the cliffs. This is called Wilson's Head. It is just below East Quoddy, and on its western side is settled,—having houses and groups of houses close to the shore. Off Wilson's Head there lies, close in with the shore, a peculiar-looking rock called **The Bull-Dog.** It is covered at half-flood, and when out of water bears some resemblance to a bull-dog.

On the northeastern side of the channel, after passing Casco Island, you will approach a small rocky island of moderate height, and covered with the usual growth of small fir and spruce. This is Green Island, lying about three-eighths of a mile **W SW.** from Casco Island, and nearly three-eighths of a mile from the Campobello shore. **Green Island.** There is good water between it and Casco Island, but the bottom is broken, and there are some bad rocks in the passage which render it unfit for strangers to attempt.

About a quarter of a mile to the westward of Green Island will be seen two large rocks, connected at low water, and variously known as **Sandy Ledge** and **Sandy Island.** About three hundred and fifty yards southwest of Sandy Ledge will be seen an island of moderate height and about an eighth of a mile long, called Pope's Folly, with a small bare rock off its southern end, and a ledge with fourteen feet water about an eighth of a mile southeast of the **Pope's Folly.** island. Pope's Folly lies **N NE.** and **S SW.**, nearly in the middle of the passage between Deer Island and Campobello, and there is good water on both sides of it. Its western shores are quite bold, but the eastern side is shoaler, and the approach to it is further obstructed by the ledge mentioned above.

On the Campobello shore, nearly abreast of Pope's Folly, lies **Wilson's Harbor**, which will be noticed as a small but deep cove making in on the south side of Wilson's Head. It is of little importance, except as a temporary

Windmill Point. anchorage in light winds or with a head tide. Half a mile below it is Windmill Point, which will appear as a long, low, rocky point, covered with grass and bushes; and forms the north side of the entrance to **Harbor de Lute.** There are two small anchorages on its eastern side, called, respectively, **Curry Cove** and **Brick Kiln Cove.** Windmill Point is quite bold, but dangerous to approach on high runs of tides unless the current is favorable, for the set of flood on spring tides is at the rate of seven knots an hour.

On the western side of the passage, opposite to Windmill Point, is Indian Island, before described (see page 17) as an island of moderate height, lying off the southeastern end of Deer Island, a little less than half a mile from Deer Point.

Indian Island. Seen from the northeastward it appears to be covered with a growth of spruce and fir; but as it is passed it will be perceived that this is the case only on the northern end,—the rest of the island being grassy, and in some places cultivated. It is well to give Indian Island a berth on coming in, as the flood-tide from The Narrows, meeting that coming through the Main Channel, is apt to cause rips and whirls sufficiently strong to embarrass the mariner.

The two small islands lying off the southeastern point of Indian Island are **Thrumbcap Island** and **Cherry Island.** The former, which is incorrectly called **Rouen Island,** is the more northerly of the two, and is a small, round, high, grassy islet, with precipitous rocky faces, and a few spruce clinging to its sides. It lies nearly three hundred yards from the eastern shore of Indian Island; and there is no passage between the two,—a reef of rocks extending across from the latter.

Cherry Island lies nearly a quarter of a mile to the southward of Thrumbcap Island and nearly three hundred yards from the southeastern point of Indian Island. It is a moderately high island, with precipitous rocky faces, and has the usual growth of stunted fir upon it.

Bald Head. Nearly one mile to the southward of Windmill Point is Bald Head, the southern point of entrance to Harbor de Lute, and opposite the city of Eastport. It is one hundred and thirty-six feet high, bluff, bold and precipitous, and has a few small firs dotting its surface. Five fathoms at low water are found close to the bluff.

The city of **Eastport** is situated on the eastern shore of Moose Island, near its southern end,—its wharf-line forming the western shore of Friar's Roads. The best anchorage in these roads for light-draught vessels is close in with the wharves and exactly opposite to the end of the street leading up to the custom-house. Our experience has been that vessels are apt to foul their anchors in any of these anchorages in Friar's Roads unless great care is taken and the anchor frequently sighted. For a safe anchorage, Broad Cove on the American, or Harbor de Lute on the English, side is resorted to.

DANGERS

IN APPROACHING AND ENTERING EASTPORT HARBOR.

By the Main Entrance from the Eastward, through the Bay of Fundy.—If passing to the southward of The Wolves, the revolving light will act as a guide to prevent all danger of running upon them, and thence the passage is clear until up with East Quoddy Head. But if passing to the northward of these islands, great care must be taken to avoid being set on the northernmost island in thick weather. The current of ebb sets directly toward the island, and unless you can get hold of East Quoddy light it is not safe in foggy weather to attempt to pass them closely to the northward. A small rock which lies a short distance from the northeastern end of the northernmost of The Wolves is called **Molasses Rock.** It is bare, and not dangerous except in thick weather.

After passing East Quoddy Head the first danger met with is Black Rock, sometimes called **Gull Rock,** but in reality two bare rocks, lying north and south of each other and close

Black Rock. together. Black Rock is quite bold, and can always be seen and avoided except in thick weather. It bears from East Quoddy light **NW.** $\frac{3}{4}$ **W.**, nearly a mile, and from the southern end of Spruce Island **SW.** by **W.** $\frac{3}{4}$ **W.**, about five-eighths of a mile distant.

After passing Black Rock there are no dangers in this passage until abreast of Pope's Folly,—both shores being exceedingly bold-to and the channel absolutely free from shoals.

Pope's Shoal. But, about one-eighth of a mile **SE.** by **S.** $\frac{1}{4}$ **S.** from the southern end of that island lies a ledge, called Pope's Shoal, with fourteen feet of water upon it, (see page 19.) It is not buoyed, but is seldom approached except by vessels beating to windward, as with a fair wind they generally keep the Campobello shore.

After passing this ledge there are no dangers whatever; but strangers may stand boldly in to the anchorage in Friar's Roads. It may be remarked, however, that without a fair wind of considerable strength it will be impossible to enter or leave this passage against tide.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING EASTPORT HARBOR BY THE MAIN ENTRANCE.

I. ***Coming from the Eastward, through the Bay of Fundy.***—From Point Lepreau to East Quoddy Head the course is **W.**, and the distance a little over nineteen miles. The soundings are varied from twelve fathoms off Lepreau to fifty fathoms off Quoddy Head. This course continue

until East Quoddy light is brought to bear **SE.** by **S.** $\frac{1}{8}$ **S.**, and about half a mile off, when there will be sixty-six fathoms of water, and **SW.** by **W.** $\frac{1}{4}$ **W.** will lead safely to the anchorage off the city. Not less than fifteen fathoms will be found on these courses. The depth at the anchorage depends on the vessel's draught,—fair holding-ground being found anywhere between four and fifteen fathoms. ***Sailing Directions--Eastport Harbor.***

The above courses pass a little over a mile to the northward of The Wolves; about a third of a mile to the southward of Spruce Island; and nearly six hundred yards to the eastward of Black Rock.

But if falling in with The Wolves, to the southward of them, when abreast of the light on the southernmost island, (which may be approached close-to,) steer **NW.** by **W.** $\frac{1}{2}$ **W.** for East Quoddy Head light, passing to the northward of it. Then steer **W.** $\frac{1}{4}$ **N.** for the middle of Casco Island until Cherry Island (which is the southernmost islet off Indian Island) bears **SW.** by **W.** $\frac{1}{2}$ **W.**, when steer **SW.** by **W.** $\frac{1}{4}$ **W.** for the city.

II. ***Coming from the Southward, through the Grand Manan Channel.***—The eastern shores of Campobello Island are quite bold-to, and may be approached closely. In case of head winds or tides they afford good temporary anchorage, the principal of which are Herring Cove, Schooner Cove, Mill Cove and Head Harbor. From the southward, having passed through the Grand Manan Channel, keep along the Campobello shore until East Quoddy light bears **NW.** by **W.** $\frac{1}{4}$ **W.**, when run for it, passing to the northward of it about an eighth of a mile. When the southernmost point of Casco Island bears **W.** $\frac{1}{4}$ **N.**, steer for it until Cherry Island bears **SW.** by **W.** $\frac{1}{2}$ **W.**, when a **SW.** by **W.** $\frac{1}{4}$ **W.** course will lead safely in. No directions are needed to enter **Herring Bay.** Its shores are bold-to, and there are no obstructions. The same remarks apply to **Schooner Cove,** which, however, is much smaller than Herring Bay and does not afford much shelter. The largest vessels may anchor in either cove in moderate weather,—the depths varying from six feet to eight fathoms.

Mill Cove, which lies about a mile and an eighth above Scott Head, and just to the southward of Head Harbor Island, is obstructed by *a three feet rock, which lies nearly in the middle of the entrance,* and is not buoyed. It may be safely entered, however, by keeping either the northern or southern shore aboard, and affords good anchorage in three and a half fathoms.

Head Harbor, before described, (see page 15,) has two entrances;—one on the south side of the island, and the other on the north side, between the island and Quoddy Head. Both passages are unobstructed; and, as the shores on both sides are bold-to, the harbor may be entered with perfect safety by strangers, as there is not less than five fathoms in the channel, and excellent anchorage in the same water at the southwest end of the harbor.

SOUTHERN ENTRANCE TO EASTPORT, THROUGH LUBEC NARROWS.

This passage, which is only used at high water, leads between West Quoddy Head and Liberty Point, the southernmost point of Campobello. The entrance is a little over a mile wide, but the passage diminishes in width until at The Narrows, two miles and a half above, it is only about an eighth of a mile wide. It is full of shoals, and strangers should not attempt it without a pilot. Good anchorage may be found, by vessels waiting for the turn of tide, in Quoddy Roads, in from three to six fathoms, either under the south shores of Campobello or on the north side of Quoddy Head; but above the Roads the water is all shoal, and it is dangerous for strangers to attempt to pass.

The Narrows are formed by a narrow passage about nine hundred yards long, which leads between Lubec Neck on the west and the shores of Campobello on the east, and thence between Pope's Folly and Dudley Island, and Treat's Island and Friar's Head, into **Friar's Roads.** The whole distance from the entrance at Quoddy Head to Eastport is five miles.

In describing this entrance it is presupposed that the mariner comes through the Grand Manan Channel, between Grand Manan and the coast of Maine.

On approaching Eastport through this passage the first prominent object visible on the Maine shore is the **West Quoddy Head and Light-house.** light-house, painted red and white in horizontal stripes. What appears to be a bell-tower stands a little to the eastward of it, and the roof of the keeper's dwelling is just visible over the land. This is West Quoddy Head Light-house, on West Quoddy Head, the western point of the entrance to this channel. The head is high and wooded, with the exception of the summit, which has only dead stumps upon it; but the light-house is built on a sort of plateau, also bare, and much lower than the summit. Two bare reefs will be seen lying off the point.

The high, wooded land which appears just to the eastward of the light-house is **Campobello Island,** whose southern point, a peculiarly shaped round head, is called **Liberty Point.** Well to the westward, over the low land west of Quoddy Head, a group of houses and a church will appear on distant high land. This is part of the village of Lubec.

Lying well out from Quoddy Head will appear a very peculiar-looking, high, rocky islet, with two smaller ones to the eastward of it,—the former having two knubbles or domes upon it, which render it unmistakable. This is Sail Rock; very dangerous in thick weather, and even in clear weather requiring a berth of from one-half to three-quarters of a mile, owing to a whirlpool which exists to the eastward of it. This rock is said to resemble, when seen from a distance, a ship under sail, but we have never been able to perceive the likeness, (see view.) There is a good passage inside of Sail Rock, between it and the head, through which seventeen feet of water may be carried, but it is not advisable for strangers to attempt it.

Sail Rock.

As you approach Quoddy Head with the intention of rounding it and entering The Narrows, a peculiar nick in the rock is noticeable on the extremity of the head, to the northward of the light-house; but this is shut in when abreast of Sail Rock. When past the range of this rock and the light-house, Lubec, with its tall church-steeple, opens out to the eastward, and low islets appear in the range, extending nearly across the channel. These are, in reality, fish-weirs, from the Campobello shores, but they present the appearance of islets.

Just above the light-house, the cliffs on Quoddy Head are composed of a brownish stratified rock for a few hundred yards, and after that of the usual grey rock. The north side of the head is high, bold and bare; and on passing it a wide bay is opened, with cultivated and well-settled shores, extending up to The Narrows. This is Quoddy Roads, and is the common anchorage for vessels waiting for tide to go through The Narrows.

Quoddy Roads.

On the Campobello shore lie a number of islets called the Duck Islands. Long flats and shoals make off from them, and on these are built the fish-weirs, which extend from the Campobello shore over to the edge of the channel. The Duck Islands are small, rocky, and crowned with a sparse growth of stunted fir. The two large but shallow coves which indent the southern shore of Campobello Island on the northern side of the Roads are called, respectively, **Great** and **Little Duck** ponds.

Duck Islands.

The western shores of the Roads between the anchorage and Lubec are lower, more gently sloping, and are mostly cleared, cultivated and settled. After passing the anchorage, the course leads to the northward and westward, passing to the westward of a red buoy marked No. 2. This is on the *Lower Middle Ground*. After passing it, the course leads nearly for a large, square beacon, painted red and white, and having a barrel and spar on top, which is built on *Western Bar*. Pass to the eastward of this close-to. Lubec Neck, which will now be seen ahead, is a long peninsula, about a mile and a half in length, running in a northeasterly direction from the mainland, and on its extremity is built the town of **Lubec**. The neck is a high, smooth, gently sloping hill, and shows a grassy surface where it is not covered with houses. The most prominent object in the town is the Baptist church-steeple, which is exactly in the middle of the highest part of the hill and is the only spire in the town.

Lubec Neck.

The southeastern point of Lubec Neck is known as **Leadurny Point.**

The shores of Campobello from Liberty Point to Cranberry Point, two miles above, are rocky and barren, and in most cases thickly wooded with fir trees. Cranberry Point, however, is almost entirely bare, and without grass or other vegetation. It is of moderate height, somewhat steep, and has one or two houses on its higher ground and a couple of fish-houses on the shore at its base. On its north side the shore of Campobello curves in to the northeastward and then to the northwestward, forming a large but shallow cove opposite to the town of Lubec. This is called **Deep Cove**, and is of little importance. Its shores are of moderate height and sandy, with water-worn faces to the westward. Its north point, which forms the eastern shore of The Narrows, is called **Charley's Point**, and is low and grassy, with sandy faces, fenced to the edge of the water. The land is fertile and under cultivation; and groups of houses occupy the higher part of the point.

Cranberry Point.

Charley's Point is the most westerly point of Campobello, and is only about three hundred yards from the Maine shore. A few hundred yards to the northward of it is another long, grassy point, of moderate height, presenting sandy, water-worn faces to the southward and westward, and with groups of houses upon it. This is called **Mchollan Point.**

The city of **Eastport** is plainly visible when passing through The Narrows; but a group of islands lying between Lubec and Moose Island diminishes the width of the channel, which keeps the Campobello shore until abreast of Friar's Head.

Lubec is a beautiful little village, and has a considerable fishing interest. Passing it, you open a deep bay which extends to the southward for about a mile and a quarter along the western side of the neck, and behind the town. This is called **Johnson's Bay**, and is a very excellent anchorage, with from three to seven fathoms of water and good holding-ground. A good channel exists from Lubec across the mouth of this bay (and on the western side of the group of islands above mentioned) into Broad Cove or into Cobscook Bay.

The fertile, well-settled shores which appear on the western side of Johnson's Bay are those of **Seward's Neck**, which forms the southern point of the entrance to Cobscook Bay.

After passing through The Narrows the channel leads to the northward, and vessels may pass either between Dudley Island and Mark Island, or between Mark Island and the shores of Campobello. The latter channel is, however, much the narrower of the two, although quite safe. **Mark Island** (or Pope's Folly, as it is now called) is that small rocky and precipitous islet which lies about six hundred yards to the northward of Lubec and three hundred and fifty yards from the Campobello shore. It is covered with a sparse growth of spruce and fir. The channel

Pope's Folly.

between Pope's Folly and Dudley Island is a quarter of a mile wide, with from six to ten fathoms at low water; while on the other side (that is, between it and Campobello) it is not over a hundred and fifty yards between the lines of three fathoms. Either channel may, however, be safely used at high water.

Dudley Island. Dudley Island is a little over a quarter of a mile to the northwestward of Mark Island. Its southwestern end is high and rocky, but the rest of the island appears more fertile and has a thick growth of low foliage upon its slopes. It is half a mile from the Campobello shore, and on its north side is connected by fish-weirs with a large island, having bare, rocky summits and gently sloping shores, which appear to be cultivated. This is Treat's Island, two hundred and fifty yards north of Dudley Island; a little over half a mile south of Estes' Head, (the southernmost point of **Moose Island**;) and half a mile to the westward of Friar's Head, which is directly opposite to it. Treat's Island is nearly half a mile long. There is a small settlement on its southern end, and its eastern face is in many places fertile and cultivated. A three-gun battery is built near its southeastern point, and the barracks and quarters on the hill behind it form prominent objects. The north end of the island is bare, except near the point, where there are a few scattered fir trees.

Treat's Island.

Burial Island. About two hundred yards to the northwestward of Treat's Island is Burial Island, low, covered with grass, and having three or four trees upon it. It lies in the entrance to Cobscook Bay; and there is no safe passage between it and Treat's Island.

Snug Cove, on the Campobello side, lies between Mehollan Point and Friar's Head, and is a very good anchorage for light-draught vessels.

Friar's Head. Friar's Head, as seen from the southward, will show a gently sloping, grassy surface, gradually rising to the northward and westward until it terminates in an abrupt rocky precipice. A few low trees are seen here and there on the slopes, and stunted firs cling to the edge of the precipice. **The Friar** is not seen until abreast of the head. **Friar's Bay**, the large and deep cove which forms the harbor of Welchpool, is seen as soon as the head is passed. There is good anchorage here, in from three to twelve fathoms, in all but northerly winds. The village seen on the north shore of Friar's Bay is the English settlement of **Welchpool**.

On the western side opens a wide passage between Treat's Island and Estes' Head, the southernmost point of Moose Island. This passage, which is half a mile wide, leads into **Broad Cove** or up into **Cobscook Bay**. If bound into Broad Cove, you must pass through this passage and steer up between Estes' Head and a high, bluff, **Shackford's Head.** rocky head, called Shackford's Head, showing low, water-worn faces to the southward, and which will appear about three-quarters of a mile to the westward of Estes' Head, forming the western point of entrance to Broad Cove. Its summit is covered with stunted fir and spruce.

Estes' Head. Estes' Head is a bluff, rocky headland, having its summit crowned with stunted fir. On its eastern side makes in a long but narrow and shoal cove, called **Prince's Cove.** Here the wharf-line of Eastport begins, and this is the southern end of the town.

DANGERS

IN APPROACHING AND ENTERING EASTPORT HARBOR BY THE SOUTHERN PASSAGE, THROUGH LUBEC NARROWS.

Morton's Rock. In approaching this harbor from the southward, about the time you make the light-house on Quoddy Head you will see to the northwestward, well in-shore, a black nun-buoy. This is on Morton's Rock, which has four feet at lowest tides, and bears from **Boot-man's Head** (a high head with two humps on its summit, not to be mistaken) **NE.** by **E.** ½ **E.**, distant two miles. The buoy is of the second class, marked No. 1, and placed in sixteen fathoms about thirty yards to the southwestward of the rock. From this buoy Sail Rock bears **E.** by **N.** ½ **N.**, two miles and a half distant.

Sail Rock. After passing Morton's Rock no dangers are met with until you approach Quoddy Head, when a very peculiar-looking rocky islet will appear lying off the head. This is Sail Rock, already described (see preceding page) as a rocky islet, with two smaller rocks to the eastward of it, lying about four hundred yards **SE.** by **S.** ¾ **S.** from the light-house. A reef of sunken rocks joins it to the two rocks outside of it, but there is a good passage on its eastern side, between it and **Little Sail Rock**, which lies close in with the shore,—being about one hundred and twenty-five yards from the light-house. Sail Rock cannot be mistaken, on account of the two peculiar knubbles, like domes, upon it. It is a very dangerous obstruction in thick weather, and even in clear weather should receive a berth of from half to three-quarters of a mile, owing to a dangerous whirlpool existing to the eastward of it. This rock is said to resemble, when seen from a distance, a ship under sail, but we have never been able to perceive the likeness.

From Sail Rock, Liberty Point (the southern extremity of Campobello) bears **NE.** by **E. Easterly**, distant about a mile and a third.

After passing this rock there are no dangers on the western side of the entrance until after rounding Quoddy Head; but a vessel beating in through the Roads, or coming from the eastward and keeping the Campobello shore best aboard, must beware of a line of ledges which lie nearly N. and S. off the mouth of Great Duck Pond. There are several bare rocks among these ledges, the southernmost of which is called Liberty Point Ledge, and lies nearly three-eighths of a mile W. ¼ S. from Liberty Point, and a quarter of a mile from the nearest shore. From the centre of this rock West Quoddy Head Light-house bears about SW. by W. ¼ W., and is distant exactly one mile.

Liberty Point Ledge.

Liberty Point Ledge is surrounded by shoal water, and should receive a berth of nearly two hundred yards. There is a passage between it and the point, with good water, but it is not safe for strangers. About one hundred and seventy-five yards northwest of it lies another small bare rock; and two hundred yards N. of it still another, called Round Rock, which is the northernmost of the bare rocks on this reef. There is no passage among them,—sunken rocks occupying the whole extent of the ledge. Shoal water extends to the northward from Round Rock for about one hundred and fifty yards; and from the rock the extremity of Liberty Point bears E. by S. ¼ S., distant three-eighths of a mile.

Round Rock.

Great Duck Pond is full of shoals and is not fit for strangers.

On the western side, after rounding Quoddy Head, you must not stand too far to the westward inside the head, as Wormell's Ledges lie along its north shore at distances varying from an eighth to a quarter of a mile. They lie in a line E SE. and W NW., and are mostly bare at low springs. All of the large bight embraced between Lubec Neck and Quoddy Head is, in fact, full of shoals; and dry flats extend off to distances varying from three-eighths to seven-eighths of a mile from shore. Inasmuch as the same is true of the eastern side of this passage, (the ledges and flats extending off in some cases nearly half a mile from the Campobello shore,) it will be seen that the channel must be extremely narrow and unsafe. But in fact, during the summer season, fish-weirs, which extend out from both shores to the edge of the channel, serve as excellent marks to keep vessels off the flats, as their extremities are always on the edge of the deep water.

Wormell's Ledges.

To avoid Wormell's Ledges in beating to windward, do not stand to the westward of the northeastern point of Quoddy Head bearing SE. ½ S. As they are not buoyed, no other directions for avoiding them can be given. After passing them the channel becomes much shallower, and there will be seen ahead, against the land, a large, square, black beacon, with tripod on top; and a little to the eastward of this, and much nearer, a red spar-buoy. The buoy is on the Lower Middle Ground, and the beacon on Western Bar.

Lower Middle Ground.

Lower Middle Ground, which has two feet upon it at extreme low tide, lies nearly in the middle of the Roads, and bears about N NW. from West Quoddy Head, distant three-quarters of a mile, and from Cranberry Point nearly S., distant one mile. The buoy is a red spar, marked No. 2, placed in good water on the western side of the shoal. The bottom is hard sand.

The square, black beacon above mentioned is on the eastern end of Western Bar, mostly composed of sand and gravel, which makes out from the Lubec shore to the edge of the channel, a distance of about three-quarters of a mile. It is mostly dry at low water. The beacon, which is painted black, is surmounted by a tripod of the same color, and is placed in position to mark the extremity of Western Bar, and also the turning point of the channel. From this beacon the middle of Cranberry Point bears NE. by E ¼ E.; the buoy on Lower Middle Ground about S SE.; and Leadurny Point N. ¾ E., distant about one mile.

Western Bar.

On the eastern shore there are many flats and shoals, but they are mostly marked by fish-weirs. Large ledges extend off from the Duck Islands in a southerly direction, but they are always bare at low water and show themselves at all stages of the tide.

When abreast of the beacon on Western Bar the course changes to the northward; and, ahead, off Cranberry Point, a conical buoy of a whitish color will be seen. It is intended for a red buoy, but had not been painted for so long a time when we last saw it that it had bleached to a dirty white. The only use of this buoy, which is marked No. 4, is to keep vessels from approaching the fish-weirs too closely. There are no flats here other than those upon which the fish-weirs are built. At this point the channel turns more to the eastward, and passes to the eastward of a long flat, bare at half-tide, which makes off from the Lubec shore. It is nothing but a continuation of the flats which form Western Bar, and is sometimes called *Lubec Flats*. Its edge is not marked, but there is a black can-buoy placed off the northern end of the weir which occupies the northern part of the flats. The buoy marks the edge of the channel at this point.

After passing this buoy, the channel turns to the northward again, until you approach the southern entrance to The Narrows. The course through The Narrows is about N. for Pope's Folly, and there are no obstructions except *the bar at the northern end, which has six feet on it.*

When fairly through The Narrows the channel is clear, and you may pass on either side of Pope's Folly, only remembering not to approach it so closely on its eastern as on its western shore. Not

more than five feet of water (it must be remembered) can be carried through the southern passage to Eastport at low water; and it is, therefore, used by vessels of large draught only at high water, and with an experienced pilot. A pilot can always be obtained at the light-house by making the necessary signal. ***Dangers--Eastport Harbor.***

In passing along the wharf-line of Eastport, if it be low water, vessels of heavy draught must beware of two sunken rocks which lie about one hundred and fifty yards from the wharf-line. The southernmost, called Page Rock, lies three hundred and seventy-five yards to the northward of Shackford's Cove, and has sixteen feet at mean low water. Margie Rock, which has fourteen feet, lies two hundred yards to the northward of Page Rock. These rocks were first determined in 1872, and are named after the vessels which first struck upon them. ***Page and Margie rocks.***

From Page Rock **Union Wharf** bears **N NW.**

If bound into Broad Cove for anchorage, you may pass either to the eastward or westward of Dudley and Treat's islands, according as the wind favors. Passing to the eastward, the channel is clear; but in the western channel there are several dangers to be avoided. The first that will be met with after passing Dudley Island is called Paddy's Ledge, a bare rock, lying about three hundred and fifty yards off the Treat's Island shore and a quarter of a mile north of Dudley Island. It is tolerably bold-to, and forms the southern end of a large ledge lying along the western shore of Treat's Island, and which is bare at low water. This ledge is about three hundred yards long in a **N.** by **W.** and **S.** by **E.** direction, and, besides Paddy's Ledge, has several other bare rocks upon it. The principal of these is **Gull Rock**, lying about sixty yards to the northward of Paddy's Ledge, and surrounded by shoal water. There is, however, a good passage, with about four fathoms water, between this ledge and Treat's Island. None of these ledges are buoyed. ***Paddy's Ledge.***

The northwestern point of Treat's Island is shoal to a distance of nearly a quarter of a mile, and at the western extremity of this shoal there is a small islet called Burial Island, low, and covered with grass, with three or four trees on it. There is a lone house here, and *a bare rock* lies off the northeastern end of the islet, which is not named. After passing Burial Island there are no dangers in the channel into Broad Cove. ***Burial Island.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING EASTPORT HARBOR THROUGH LUBEC NARROWS.

I. ***Coming from the Eastward, on the North Side of Grand Manan.***—When off Bishop's Head, with Quoddy Head Light bearing **W.** by **N.** ¼ **N.**, a little over seven miles distant, steer for it until Liberty Point bears **N.** by **E.** ½ **E.**, and you are within a mile of the light-house. At this point there will be from twenty-five to thirty fathoms, rocky bottom. The entrance to the Roads being now fairly open, steer **NW.** ½ **W.** for about a mile and a half, carrying not less than four fathoms. This will lead up to the red buoy on the Lower Middle Ground. Passing this buoy, if the tide is low, you should anchor in the bight north of Quoddy Head, in from three to five fathoms, and wait for high water. But if bound up and the tide is favorable, steer **N.** by **W.** ¼ **W.** for the black beacon on Western Bar, carrying not less than eight feet. You may go close to this beacon, leaving it to the westward, and when abreast of it haul up **N.** by **E.** for the conical buoy off Cranberry Point. On this course there will be not less than six feet. Pass to the westward of the buoy, close-to, and steer **NE.** ½ **N.**, passing to the eastward of the large fish-weir making off from the Lubec shore. On this course Lubec Flats are left well to the westward and there will be not less than seven feet. Continue past the weir, gradually hauling around it until heading **N.**, and when Lubec church-steeple bears **N NW.** and you are abreast of the black nun-buoy off the northern end of the weir, steer **N.** by **W.** about for the eastern end of the Lubec wharves. On this course there will be not less than nine feet water. When abreast of Leadurny Point, steer through The Narrows, heading about for Pope's Folly. The course is **N.** in the middle of the passage, and there will be from four to seven fathoms until the bar at the northern end of The Narrows is reached, which has six feet on it. There is a strong tide-way in The Narrows.

When through The Narrows, continue the course for Pope's Folly until within two hundred yards of it; when, if intending to pass to the eastward of the island, steer **NE.** ½ **N.** for a quarter of a mile, carrying seventeen feet water, or until the wharf on the south end of Treat's Island bears **NW.** by **N.** ½ **N.** Now steer **N.** by **E.** ¼ **E.** through the Roads up to the town. If intending to anchor off the town, keep close in along the wharf-line and anchor in from four to six fathoms, out of the strength

Sailing Directions --- Eastport Harbor. of the tide. The best anchorage (as mentioned on page 20) for light-draught vessels is close in with the wharves, and exactly opposite to the end of the street leading up to the custom-house.

If intending to pass between Dudley Island and Pope's Folly, round the latter to the westward, keeping about a hundred yards from it, and in not less than four fathoms, and steer **N NE.**, past Dudley and Treat's islands, and anchor as before.

These courses pass half a mile to the southwestward of Liberty Point Ledge; half a mile to the eastward of Sail Rock; a little over three hundred yards to the eastward of Wormell's Ledges; about eighty yards to the westward of Lower Middle Ground; and to the eastward of Western Bar, close-to.

It must be remembered that all of the above courses are supposed *to be made good.*

II. ***Coming from the Southward, through Grand Manan Channel.***—Coming up the middle of the passage, as soon as Quoddy Head light is made, bring it to bear **N.** by **E.** ½ **E.**, and steer for it until within a mile, when haul off **NE.** by **E.** so as to pass well outside of Sail Rock. When the highest point of the rock is in range with the light-house, or when the latter bears **NW.** by **N.** ¾ **N.**, haul up **NE.** by **N.** ¾ **N.** and gradually round Quoddy Head until the Roads are well open. When the light-house bears **W.** ½ **S.** and is a little over half a mile distant, steer **NW.** ½ **W.** toward the red buoy on Lower Middle Ground, and when up with it proceed as above directed.

Or, continue the course **NW.** ½ **W.** until Quoddy Head Light bears **S.** by **E.** ½ **E.**, and then steer **N.** by **W.** ½ **W.**, with the light bearing **S.** by **E.** ½ **E.** This course will lead up to the beacon on Western Bar.

Coming along shore from the Westward, steer **NE.** ¼ **E.**, from off the mouth of Little River, until the highest part of Sail Rock is in range with the light-house, or until the light-house bears **NW.** by **N.** ¾ **N.**; when steer **NE.** by **N.** ¾ **N.** and proceed as before directed.

The above courses pass nearly half a mile to the southeastward, and about six hundred yards to the eastward, of Sail Rock; and well to the southward of Morton's Rock.

III. ***To come through The Narrows and enter Broad Cove.***—To enter Broad Cove from The Narrows, you may pass either to the eastward or westward of Dudley and Treat's islands, according as the wind favors. *If to the eastward,* continue the **N NE.** course from abreast of Pope's Folly (mentioned above) until past the southeastern point of Treat's Island, on which course there will be not less than six fathoms. Now gradually haul to the westward, steering about midway between Buckman's and Estes' heads, (or about **N.** ¼ **E.**,) until the northern end of Treat's Island bears **W.** by **S.** ¾ **S.** Now steer **NW.** ¾ **N.** toward Shackford's Head, passing Estes' Head in eight fathoms, and from a hundred to a hundred and fifty yards off; and when the cove is fairly open and you are within a quarter of a mile of the low sand-cliff on the southeastern extremity of Shackford's Head, steer **N.** ¼ **E.** into the harbor, and anchor at pleasure. There is not less than six fathoms on the above courses, from Pope's Folly to the cove.

Passing to the westward of Dudley and Treat's islands; when clear of The Narrows, steer **NW.** ¾ **N.** until past Dudley, and its northern point is brought to bear **E.** ⅛ **S.**, and in range with the middle of Friar's Head. The western point of the island should be about four hundred yards distant, and eight fathoms water will be found. Now haul up **N.** ¼ **E.** for the harbor, and continue this course to the anchorage.

Vessels using this passage pass about four hundred yards to the westward of Paddy's Ledge; about three hundred and fifty yards to the westward of Gull Rock; and an eighth of a mile to the westward of Burial Island.

In The Narrows the flood and ebb set nearly in the direction of the passage. Sailing vessels cannot pass through The Narrows against the tide, unless with a very strong fair wind.

There are no directions necessary for entering Johnson's Bay. There are from three to seven fathoms at the anchorage, and the ground is good.

It may not be out of place to remark here that, for vessels which do not wish to come along the coast, an **E NE.** course from Matinicus Rock will lead to West Quoddy Head. This course *made good* passes about two miles off the head.

LIGHT-HOUSES.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
East Quoddy Head Light-house	44 57 28	66 54 0	4 27 36.0	Fixed.	64	13½
West Quoddy Head Light-house	44 48 54	66 57 1	4 27 48.1	Fixed.	133	18

TIDES.

Corrected Establishment at Eastport	11h 8m
Mean Rise and Fall of tides	18.1 ft.
Mean Rise and Fall of Spring tides	19.4 ft.
Mean Rise and Fall of Neap tides	16.3 ft.
Mean duration of Rise	6h 3m
Mean duration of Fall	6h 22m
Rise of highest tide observed	23.3 ft.

VARIATION OF THE COMPASS.

The magnetic variation for 1879 will be for East Quoddy Head 18° 32′ W., and for West Quoddy Head 18° 27′ W., with an approximate annual increase of 2′.

LIFE-SAVING STATION.

The United States Government has established at West Quoddy Head a life-saving station, provided with boats and other necessary apparatus for the succor of vessels in distress.

SHORES OF PASSAMAQUODDY BAY FROM EASTPORT TO THE ST. CROIX RIVER.

Vessels from the vicinity of Eastport, bound for the St. Croix River or into Passamaquoddy Bay, go through the Main Channel between Deer Island and Campobello, pass to the westward of Indian Island, round Deer Point, and steer up between Moose and Deer islands. After passing Deer Point there will be seen on the western shore a high hill, called Kendall's Head, which is the northeastern extremity of **Moose Island.** It is bare on its summit, but fringed with a thick growth of scrubby fir and spruce at its eastern end, where it shows a sandy, water-worn face, ending in a low rocky point, thickly wooded. The large cove, with smooth sandy beach, which makes in on its southern side, is called **Johnson's Cove**, and is a most excellent anchorage. At the western end of the cove the shore is low and well cultivated. Vessels may anchor in seven fathoms at low water with but little tidal current. **Kendall's Head.**

Opposite to Kendall's Head, on the Deer Island shore, will be seen another cove, called Cummins' Cove, not so large as Johnson's, but affording good anchorage with an unobstructed entrance. It may be known by the large sand cliff on its northern side, with a few fir trees clinging to the perpendicular sides, behind which appears a high, steep, rocky head crowned with fir. The rest of the shores of the cove are nearly level and well cultivated, and there is a small settlement here. **Cummins' Cove.**

On passing Kendall's Head a wide passage is opened to the westward, between the northern shore of Moose Island and the mainland, leading into Pembroke River. About three-quarters of a mile above, it is crossed by a large covered bridge, painted white, which connects Moose Island with the mainland; but the passage is for the most part dry at low water. In the middle of the entrance lies Treat's Island, which at low water is joined to Moose Island by a dry sand spit. This island is half a mile long, with somewhat rocky shores, and should receive a berth to the westward of about a quarter of a mile. Its northern point, which is quite rocky, is called **Mitchell's Point,** and is only about an eighth of a mile from the mainland, which here extends to the southward into a long narrow point, called **Pleasant Point,** on which is a large Indian settlement. This settlement will appear as a cluster of small houses, with a church in the foreground, and, in a prominent position, a tall flag-staff bearing a white flag with a red cross and other devices undistinguishable from the channel. **Treat's Island.**

About a mile and a quarter above Cummins' Cove, on the Deer Island side, will be seen a rocky head, called **Clam Cove Head,** thickly covered with scrubby fir. It is the westernmost point of Deer Island, and on its southern side makes in a large cove, called Clam Cove, which is an excellent harbor, sheltered from all winds, with sufficient water for the largest vessels which resort hither, and is especially fitted for a winter harbor,—being free from ice. When abreast of it there will be seen on the western shore a large cove, called **Gleason's Cove**, and sometimes **Perry Harbor,** into which empties a small stream, called **Little River,** leading up to the village of **Perry.** This cove also affords anchorage, and is distant from Pleasant Point about one mile. **Clam Cove.**

When abreast of Clam Cove Head there will be seen a little to the eastward of **N.**, and about six miles off, the village of St. Andrew's. To the westward of the village opens the St. Croix River; to the eastward spreads away the great bay of Passamaquoddy; and behind it rise the **Chamcook Hills** to the bald summit of **Mount Simpson,**—six hundred and twenty-seven feet above the sea.

Northwest Head. Passing Clam Cove Head you will open Northwest Head on the Deer Island shore, which forms the southern side of **Northwest Harbor,**—an excellent harbor of refuge, with sufficient water for large vessels. From the head the shores of Deer Island stretch away to the northeastward for nearly four miles to **Northeast Head,**—two hundred and thirty-two feet high; and there is a small harbor contained between this head and **Pendleton Island**, which lies close to it.

Frost's Cove. On the western shore, a little over a mile above Gleason's Cove, is a small indentation, called Frost's Cove, which has good anchorage off its mouth in from four to six fathoms at low water. About a mile and a half above it is **Gin Cove,** very small, but with good anchorage; and a little over a mile above this is **Lewis' Cove,** upon the shores of which is the settlement of **North Perry.**

The low sandy island on the eastern shore, nearly abreast of Lewis' Cove, is Navy Island, sometimes called **St. Andrew's Island,** and lies at the entrance to the St. Croix River. It is a little over a third of a mile from St. Andrew's Point, and presents to the southward a white water-worn cliff about thirty-five feet high. Its southern half is entirely bare of trees, but a thick growth of low spruce occupies about half of its northern part. The northern point of the island is lower than the southern, and is in some places cleared and in others dotted with a thin growth of scrubby fir.

Navy Island. It lies **NW.** and **SE.,** is about a mile long, and forms the western and southwestern shores of **St. Andrew's Harbor.** It is tolerably bold-to on its southwestern side; but on the harbor side the flats extend nearly over to the mainland, leaving but a narrow passage at low water. The channel to the northwestward of the island is very narrow at low tide,—the flats nearly joining,—but at high springs there is a depth of from three to four fathoms. The eastern channel is considered the best, and has been marked and buoyed The wooden pyramid, painted white, and seen to the westward of the island, is the beacon on *Navy Island Reef;* and nearly opposite to this, on the Maine shore, is **Mill Point,**—the western point of entrance to the St. Croix River.

The village of **St. Andrew's,** which belongs to New Brunswick, is built on St. Andrew's Point, at the base of the great Chamcook Hills, whose slopes here, for nearly five miles, form the eastern shores of the St. Croix. It contains about twenty-eight hundred inhabitants, and its principal business is in lumber. The harbor has, in no place, more than from twelve to sixteen feet at low water, but is excellent and well sheltered. There is not more than one foot at low water in the channel, and it is in some places very narrow.

St. Andrew's Point. The land on St. Andrew's Point is very gently sloping and entirely under cultivation; but to the northward the hills increase gradually in height until an elevation of over six hundred feet is reached, at the top of Mount Simpson, the highest of the Chamcook Hills. At the southeastern end of the village is built the

St. Andrew's Light-house. light-house, called St. Andrew's Light-house, a low white tower, thirty-five feet high, standing upon a wharf, and showing a fixed white light, visible about ten miles. Its geographical position is

Latitude ..... **45° 4′ 10″ N.**
Longitude ..... **67° 2′ 50″ W.**

On the northern side of the eastern entrance to St. Andrew's Harbor, and about a mile to the eastward of St. Andrew's Point, is built another light-house, on a sand reef. It is a square, white tower, forty feet high, and shows a fixed white light, visible ten miles. Its geographical position is

Latitude ..... **45° 3′ 45″ N.**
Longitude ..... **67° 0′ 50″ W.,**

and it bears from St. Andrew's Light-house **SE.** by **E.** The eastern entrance to the harbor is between this light-house and the beacon on the eastern spit of Navy Island.

ST. CROIX RIVER.

This river empties into Passamaquoddy Bay at its southwestern end, separating the Province of New Brunswick from the State of Maine. Its entrance, between Navy Island on the east and Mill Point on the west, is about two miles wide; but it gradually contracts to a mile, which width it retains, as an average, to The Divide, about seven miles and a half above. There is good water in the channel below The Divide—the least depth being five fathoms at low water; but beyond this it rapidly shoals. Twelve feet can be taken up to The Ledge, and from six to eight feet to Calais, according as the northern or southern channel is used.

The course of the St. Croix from its mouth to The Divide is about **N.** ¾ **W.,** and the distance seven miles and a half. Here it branches,—the eastern branch forming what is called Oak Bay, continuing in about a **N.** by **E.** direction for a little over four miles; while the western branch, forming the main river, turns abruptly to the westward, and runs with many changes of course, for about five and a half miles, to the city of Calais. The latter is built upon the south bank, and the town of St. Stephen's, New Brunswick, on the north bank. The whole distance from the mouth of the river to Calais is thirteen miles.

Navy Island, the eastern point of entrance to the St. Croix, has been described above. Mill Point, the western point, is steep and bold, forty-five feet high, and forms the northern point of entrance to a large but shallow cove

Mill Point. called **Mill Cove,** where there is a small settlement. About a mile above the point, and nearly opposite to the village of St. Andrew's, is the village of **Robbinston,** with considerable trade in lumber and ship-building. The land is here of moderate height, slopes gently as it recedes from the river, and is nearly all under cultivation.

Joe's Point.

Exactly opposite to Robbinston, on the eastern bank of the river, and about a mile to the northward of Navy Island, is Joe's Point, or **Block-House Point**, as it was formerly called. It is a high, gently sloping, round point, mostly grassy, but dotted here and there with scrub fir. There was formerly a block-house upon it, whence its name.

The land at the base of the Chamcook Hills is level and well cultivated.

On the western shore, a mile above Robbinston, is **Brick-yard Point**, a high clay head with precipitous faces, and crowned with a thick growth of young birch and spruce. It is sometimes called **Byrne's Head**. There is a brick-yard here, close to the shore.

The channel now leads toward two small islands, called the Dochet Islands, one lying tolerably close to the west bank and the other almost exactly in the middle of the river. This latter is three miles and a half above Robbinston and fourteen miles above Eastport. The islands are called, respectively, Dochet and Little Dochet Island.

Dochet Island.

Dochet Island, sometimes, though incorrectly, known as **St. Croix Island**, has a light-house upon it, the lantern rising from the southern end of the keeper's dwelling. The island is of moderate height, with precipitous, sandy faces, to which, here and there, cling clumps of trees. The light-keeper's dwelling stands near the middle, and is a conspicuous object. The island is shoal in its surroundings, and must receive a good berth, whether you pass on its eastern or western side.

St. Croix Light-house.

St. Croix Light-house, on Dochet Island, is a lantern rising from the keeper's dwelling, both being painted white. The light is fixed, varied by flashes at intervals of thirty seconds; of the fifth order of Fresnel; shown from a height of seventy-one feet above the sea, and visible twelve nautical miles. Its geographical position is

Latitude	**45° 7′ 43″ N.**
Longitude	**67° 8′ 0″ W.**

Just before reaching Dochet Island the **Main Channel** passes to the eastward of **Little Dochet Island**, a small, rocky islet, with three or four fir trees upon it, lying close in with the western shore, about half a mile north of Brick-yard Point. It is about a mile below Dochet Island and about a quarter of a mile from the western shore.

The passage to the westward of Little Dochet Island is narrow, and not safe for strangers;—having several rocks in it.

On the western shore, nearly opposite to Dochet Island, is the settlement known as **Red Beach**. The shores are steeper in this vicinity and not so fertile—being mostly covered with a thick growth of scrubby trees. The trade is in plaster—for the manufacture of which several mills have been erected.

Sand Point.

On the eastern shore, just above Dochet Island, is a sandy point, presenting precipitous faces toward the river, with stunted fir trees clinging to them in a few places. This is called Sand Point It is not safe to approach, as a long spit extends a quarter of a mile from it toward the channel. Above this the eastern shores rise to a considerable height, varying from four to six hundred feet.

Devil's Head.

The usual course for vessels when past Dochet Island is to haul up about **N NW.** for Devil's Head, or **Boundary Point**, the most conspicuous object on the St. Croix River, and which can be seen from below Robbinston. It lies on the west bank of the river and on the south side of The Divide, and is a very steep hill, rising to a height of two hundred and fifty feet. At the river bank it terminates in a bold, bluff head, covered mostly with a growth of small fir and spruce; but on its southern side a portion is cleared and has a few houses upon it. It is quite bold, as is also all of the shore between Red Beach and the head. Here is formed **The Divide**;—the St. Croix turning abruptly to the westward, and a branch running nearly **N.** and **S.** for four miles and a half, forming what is called **Oak Bay**, a long and wide bay, with from two to eight fathoms in it, but of no special importance.

Into the eastern part of Oak Bay, near its mouth, empties a long, narrow and shoal creek, called **Warwig Creek**. The bay itself is easily recognized by a high, wooded hill, which appears in the middle of it.

Oak Point.

Opposite Devil's Head, on the north side of the St. Croix, and separating Oak Bay from the river, is a grassy point, bare of trees and of moderate height, with perpendicular faces, known as Oak Point. Its surface is somewhat flat and under cultivation, and a house and barn are visible from the river. On the same shore, three-quarters of a mile above Oak Point, is a high, precipitous, rocky head, called **Raven's Head**, or **Bluff Head**, the south face of which is as perpendicular as a wall. The head is covered with a thick growth of fir and other trees.

On the southern side, above Devil's Head, the shores are diversified,—being partly cleared and cultivated and partly wooded, the principal growth being small fir and spruce; while on the north shore, just above Raven's Head, is found low, grassy land, studded with small trees, and behind this rises a high, bare, white, rocky hill, destitute of either trees or grass. This is called **Brown's Hill**, or **Bald Hill**, and is a very remarkable object.

Spruce Point Light-house.

On **Spruce Point**, at the base of Brown's Hill, and about half a mile above Raven's or Bluff Head, will be seen a tower of open-work, painted brown, and surmounted by a lantern. This is Spruce Point Light-house, and shows a fixed white light from a height of thirty-two feet above high water. Its geographical position is:

Latitude	**45° 10′ 0″ N.**
Longitude	**67° 10′ 30″ W.**

The settlement called **The Ledge** is situated on the shore near Brown's Hill, and about one mile above Oak Point. The land is here rocky and barren, but there are several wharves for the convenience of vessels loading. Those desirous of lying afloat at low water must anchor, as above this point they will be obliged to lie aground at low tides.

Mark Point Light-house. At The Ledge, on what is called **Mark Point**, is another tower of open-work, also painted brown. It is called Mark Point Light-house, is serviceable as a guide to vessels passing The Ledge, and shows a fixed white light from a height of thirty-two feet above high water. Its geographical position is

Latitude ..... 45° 10′ 20 ″ N.
Longitude ..... 67° 12′ 20″ W.

It is under no circumstances safe for vessels to go above The Ledge without a pilot, as the narrow and dangerous reach called the **Bog Brook Passage** begins just above the settlement. Its course is about **SW.** and its length three quarters of a mile.

The Ledge. The Ledge itself, from which the settlement takes its name, is on the southern shore of the river, opposite to the settlement, and is covered only at high water. On its end is built a large wooden beacon supported on three piers, and a black spar buoy marks the point of the flats which lie off this ledge. Above this, on the southern shore, the land is mostly low, rocky and thickly wooded; while on the northern shore it is diversified with partly wooded and partly cultivated lands. Much of the higher land on the northern shore of Bog Brook Passage

Heckman's Point. is cleared and beautifully cultivated. The northern point, at the western end of the passage, is low and grassy, with sand faces fringed with trees, (mostly birch,) and is called Heckman's Point. Here the channel turns to the northward and westward,—the course being about **W NW.** Heckman's Point is about two miles below Calais. After passing it the southern shore of the river is high, cleared, gently sloping, dotted with orchards, and under fine cultivation. The northern shore is rocky, barren and thickly wooded.

Todd's Point. On the southern shore, about three-quarters of a mile above Heckman's Point, will be seen a thickly wooded point, called Todd's Point, rather low, with handsome houses upon it, and several wharves extending out towards the channel. Vessels load here with lumber during the winter, when the ice prevents their passage above. The steamer which runs from Eastport to Calais also stops here at low water, being unable to get up to her wharf.

The suburbs of **Calais** begin about a quarter of a mile above Todd's Point; and both this town and its opposite neighbor, **St. Stephen's**, are visible from here. They are connected by a covered bridge.

At Calais vessels must run alongside the wharves and lie aground. The wharves are built out almost to the edge of the channel on both sides,—the distance across between their ends being only from three hundred and fifty to four hundred feet. The river is here very narrow, and the channel still narrower, (there being no room for a vessel to swing at low water,) and there is great danger of being run into by the tows which are constantly moving up and down. It is, therefore, as above remarked, better to run alongside the wharves.

The immense lumber business, of which Calais is the centre, draws thither in the summer season a great number of coasters, most of whom, as above stated, rely upon steam for their safe conveyance to and from the town. A careful description and detailed sailing directions may, however, enable a vessel to save time (if not able to get a tow) by sailing up as far as The Ledge; and, if light, she may even go up to the town, provided she has an experienced pilot. In 1872, in our schooner, drawing ten feet, we beat through this passage and came safely up to Calais; but we would not advise this course to any vessel, unless, as before stated, she be of light draught and has an experienced pilot.

The tidal current runs with considerable velocity in the St. Croix, so that sailing vessels must always wait for a fair tide or a tow-boat. It is impossible, also, for strangers to go very far above The Divide on account of the narrowness of the channel, the ledges and flats which obstruct it, and the absence of buoys to properly mark the dangers. Pilots can always be obtained at Eastport, and vessels generally take a tow-boat between The Divide and the town.

DANGERS

IN APPROACHING AND ENTERING ST. CROIX RIVER FROM THE VICINITY OF EASTPORT.

On leaving Eastport, bound up the St. Croix, the first danger met with is Clarke's Ledge, which is bare at low water, lies about three hundred and seventy-five yards above Todd's Head and about one hundred yards from shore. It is not buoyed, and always shows itself. About a

Clarke's Ledge. quarter of a mile above it lies **Dog Island**, close in with the shore. Neither of these would be at all dangerous were it not for the *whirls off Deer Point*, which compel vessels to keep the Moose Island shore close aboard to avoid them. These whirls on spring tides extend two-thirds of the way across the passage between Deer Point and Dog Island; and mariners, in their anxiety to avoid them, are sometimes set upon **Dog Island Point.**

After passing Dog Island no dangers are met with until past Pleasant Point and up with Frost's Head, the southern point of the entrance to Gleason's Cove, when a black spar-buoy

Frost's Ledges. will be seen to the westward. This is on Frost's Ledges, which extend in a northeasterly direction from the head for a distance of nearly three-quarters of a mile. The buoy is marked No. 1, and is placed in fourteen feet water, on the eastern end of the reef. Vessels must not attempt to pass to the westward of it, as the reef is a dangerous one.

When past Frost's Ledges there are no more dangers until nearly up with Navy Island, when a pyramidal white beacon will be seen off the northwestern end of that island. This is on Navy Island Reef, or *Northwest Shoal*, as it is sometimes called, and is a guide for vessels entering or leaving St. Andrew's Harbor. It also serves to keep vessels off the reef when beating to windward in the St. Croix. ***Navy Island Reef.***

On approaching Dochet Island a black spar-buoy will be seen nearly in mid-river. This is on the southern end of The Middle Ground, and vessels using the main channel pass to the eastward of it; while those using the western channel pass to the westward. The Middle Ground is a long ledge, with three feet at lowest tides, and is composed mostly of gravel. The buoy is marked No. 3, is placed in soft, muddy bottom, in thirteen feet at lowest tides, and may be passed on either hand entering by the eastern or western channel. The ledge lies about a mile and a half **S.** ½ **E.** from Dochet Island, and is quite extensive, but is easily avoided while the buoy is in position. ***The Middle Ground.***

Passing the black buoy on The Middle Ground a red spar-buoy will be seen off the southern end of Dochet Island. This is on Half-Tide Ledge, which lies between a half and three-quarters of a mile to the southward of Dochet Island, and is bare at half-tide, as its name indicates. There is no passage between it and the island. The buoy is marked No. 2, placed in seven feet at lowest tides, on the southern end of the rock, and when in position, St. Croix Light-house bears **N.** by **E.** It may be approached within thirty yards. ***Half-Tide Ledge.***

On coming up with the northern end of Dochet Island there will appear to the westward and off the northern end of the island a red spar-buoy, marking the northern point of *the ledge which extends off in that direction.* It may be approached on its northern side within a few yards, but is colored red for the western passage.

In the western passage there is a red spar-buoy nearly in the middle, which marks a sunken rock with five feet at low water off Dochet Island, called *Dochet Island Sunken Ledge.* The buoy must be left to the eastward.*

Sand Point Shoal extends off from Sand Point a distance of a quarter of a mile, and is very dangerous,—principally because it is not marked by a buoy. Vessels to avoid it must, as soon as they can clear the red buoy on the northern end of Dochet Island, haul up for Devil's Head, running close to it. A buoy will be recommended to be placed upon this shoal. ***Sand Point Shoal.***

After passing Devil's Head there are no obstructions until The Ledge is approached, when a large wooden beacon will be seen on its northwestern end and a black spar-buoy to the eastward of it. The beacon is on The Ledge, is built of timber, and stands upon three piers, and is twenty-six feet high, a little narrower at the top than at the bottom. The Ledge extends off from the Maine shore of the river opposite to the settlement, and is covered only at high water. ***The Ledge.***

The black spar-buoy to the eastward of the beacon is on Elliott's Flats, which extend off towards the channel from the end of The Ledge. It is marked No. 5, and is placed in six feet at lowest tides, on the edge of the flats. After passing it there are no dangers until up with **Knight's Point**, at the western end of Bog Brook Passage. Here will be seen a black spar-buoy, which marks *Knight's Point Flats,*—extending off from the point to the edge of the channel, and bare at low water. The buoy is placed in six feet at lowest tides, and is marked No. 7. ***Elliott's Flats.***

All of these buoys are taken up in the winter; strangers should, therefore, never attempt to navigate the river in winter without an experienced pilot.

Beyond Knight's Point there are no buoys. It is not safe for vessels to go above The Ledge without a pilot.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING THE ST. CROIX RIVER FROM THE VICINITY OF EASTPORT.

It is best not to attempt to go up the St. Croix River without a pilot, who can always be found at Eastport or on Campobello. The usual course is to enter by the Main Channel, (between Deer Island and Campobello,)— the course in being **SW.** by **W.** ¼ **W.** until Cherry Island bears **N.**, when, if not intending to stop at Eastport, steer **NW.** by **W.** ½ **W.** for Dog Island until within a quarter of a mile of it, and Deer Point bears **N.** by **E.** ¼ **E.** Kendall's Head will now bear **NW.** by **N.** ½ **N.**; and you may steer for it, unless the tides are springs and the whirls farther to the westward than usual. In this latter case, pass Dog Island within two hundred yards, and keep the western shore aboard until past the danger. Under ordinary circumstances, however, the course given above leads clear of the whirls. Continue it until abreast of the middle of Johnson's Cove, and Deer Point bears **SE.** by **E.**, with the southern point of Indian Island just open to the southward of it. Now steer **N.** by **W.** past Kendall's Head, (passing about three hundred and fifty yards to the eastward of it,) and

*This buoy is not on the Buoy-List. It has probably been placed here by the pilots.

Sailing Directions—St. Croix River. continue this course until abreast of Gleason's Point, which is the northern point of entrance to Gleason's Cove. Upon these courses there is nothing less than eight fathoms water. Now steer **N.** ½ **W.** for St. Croix Light-house until nearly up with the black buoy on The Middle Ground. Pass to the eastward of this, and steer **N.** by **W.** ½ **W.** until past the island and clear of the red buoy off its northern end. (This buoy must be left to the southward by vessels using the Main Channel. It is painted red for the use of vessels entering by the western channel, and by them must be left to the eastward.) From Gleason's Point to this buoy there is not less than ten fathoms in the channel. When clear of this buoy, after passing Dochet Island, steer for Devil's Head, rounding it close-to. The course is between **N.** by **W.** and **N NW.** When abreast of the head, steer **NW.**, which course will lead up to The Ledge, three miles below Calais. Here anchor, if desiring to lie afloat at low water. From the red buoy off the northern end of Dochet Island to The Ledge the least water will be two fathoms.

If bound up to town and intending to go alongside the wharves; after passing the black buoy on Elliott's Flats, steer **SW.** through Bog Brook Passage, which is three-quarters of a mile long. When fairly through it, steer **W NW.** from abreast of Heckman's Point until up with **Todd's Wharf**; after which keep the middle of the river up to the city. The least water in the channel from The Ledge to Calais is eight feet, if in the channel on the St. Stephen's side;—that on the Calais side having only about six feet.

It is rarely that vessels do not have to beat either up the river or through the Bog Brook Passage. A wind which is favorable through the Passage is preferable, even though it necessitates beating to windward throughout the whole length of the river, for the strong current of flood will aid in accomplishing the distance from Navy Island to The Ledge in a short time; while on the other hand the channel in the Bog Brook Passage is so narrow that none but a smart sailing vessel can with safety attempt it, as one is scarcely under way on one tack before it is necessary to go about on the other. It is strongly recommended to strangers, however, to take a pilot before attempting the passage of this river. Tug-boats can always be had at Eastport and Calais for a tow either up or down the river, and most of the coasters avail themselves of these time-and-money-saving machines.

The courses given above pass three hundred yards to the eastward of Clarke's Ledge; two hundred yards to the eastward of Dog Island; one-third of a mile to the westward of Deer Point; about fifty yards to the eastward of Middle Ground buoy; the same distance to the eastward of the red buoy on Half-Tide Ledge; about twenty yards to the northward of the red buoy off the northern end of Dochet Island; about thirty feet to the northward of the black buoy on Elliott's Flats; and about twenty yards to the northeastward of Knight's Point buoy.

The St. Croix River at Calais is being improved by the Government, and it is proposed to deepen the channels over the bars.

From the anchorage at Eastport, steer **N.** by **E.** for Deer Point, and when abreast of Clarke's Ledge haul up **N.** by **W.** until abreast of Dog Island, when steer **NW.** by **N.** ½ **N.** and proceed as above directed.

These courses pass one hundred and fifty yards to the eastward of Clarke's Ledge, and nearly a quarter of a mile to the eastward of Dog Island.

A vessel coming down the St. Croix with a **SW.** wind, if caught by the flood tide above Deer Point, may go quite close to that point, (unless the whirls are too bad;) and when past it, the current of flood through Indian River will take her on the lee bow, and thus favored she may easily beat up to the anchorage off Eastport against the tide. This is often done by coasters whose captains are familiar with the currents or who have an experienced pilot on board.

LIGHT-HOUSES.

NAME.	Latitude N.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		s.	Feet.	
St. Croix River Light-house...	45 7 43	67 8 0	4 28 32	F. V. F.	30	71	12
Spruce Point Light-house.....	45 10 0	67 10 30	4 28 42.0	Fixed.	.....	32	.....
Mark Point Light-house	45 10 20	67 12 20	4 28 49.3	Fixed.	.....	32	.....

No observations of tides in the St. Croix River have as yet been made by the Coast Survey. Mariners must, therefore, depend upon the Eastport tides and upon local information. *If a vessel starts from Eastport to Calais with a fair wind on the first quarter of the flood, she will carry the current of flood with her all the way.* If she has a head wind, she may start as soon as the tide turns; but if there be a strong fair wind and she starts at the turn of the tide, she will be apt to run out of it before reaching The Divide.

At St. Andrew's Harbor, according to the English surveys, it is high water on the days of full and change at $10^h\ 50^m$. The rise and fall of spring tides is from twenty-four to twenty-six feet; of neap tides, from twenty to twenty-two feet; and the mean rise and fall of tides, twenty-three feet.

At the anchorages in Passamaquoddy Bay *the tidal current is scarcely perceptible; but it is said that the tide rises twenty-seven feet at The Ledge, with a very swift current.*

VARIATION OF THE COMPASS.

The magnetic variation at St. Andrew's *Light-house in 1879 will be about* **18° 27′ W.**

COBSCOOK BAY AND TRIBUTARIES.

This extensive bay, the entrance to which lies between Estes' Head and Seward's Neck, extends into the land about four miles in a westerly direction, where it sends off numerous branches. Its northern branch, called Pembroke River, or **Pemaquan Bay,** extends to the northwestward for three miles and a half to the town of Pembroke. Its western branch, called Cobscook River, runs to the westward a mile and a half, where it splits into two branches called, respectively, the North and South branches;—the former running to the northwestward about five miles, to the town of Dennysville, and the latter extending to the southward about five miles, to the town of Whiting.

The southern branch of *Cobscook Bay, called South Bay, extends to the southward for six miles to* West Lubec. There are other branches of little importance,—such as East Bay, on the northern side, just to the eastward of Pemaquan, and Straight Bay and Middle Bay, branches of the Cobscook River, which run to the southward between South Branch and South Bay. Of these branches Pemaquan Bay (or Pembroke River, as it is now called) is the only one of much commercial importance, or which can be entered without a pilot. Both the North and South branches of the Cobscook are shoal, and of exceedingly dangerous navigation. South Bay has good water, but is of little importance. No survey either of the shores or of the channels of Cobscook Bay and its branches has as yet been made; but such descriptions and directions as could be obtained by personal examination and information derived *from the pilots are given below.*

PEMBROKE RIVER.

The entrance to this river is five miles above Estes' Head,—lying between Garnett's Head on the east and Leighton's Head on the west. Between these two points it is a little over a mile wide, but rapidly contracts to a width of half a mile, which average width it keeps to Hersey's Head, two miles above. Above this head the river becomes still narrower, until, at the town of Pembroke, it is a mere creek.

Pembroke is about nine miles above *Estes' Head. Considerable business is done here both in lumber and iron,—the* **Pembroke Iron Works** causing also some trade in coal, which is brought here for their use. The channel is buoyed from the entrance to the Southwest Passage, at Estes' Head, up to the town, which is situated on the west fork of **The Divide,** while the Iron Works are on the eastern fork. It has about twenty-five hundred inhabitants.

Vessels bound up this river enter the **Southwest Passage** either by the Northern Channel (between Estes' Head and Treat's Island) or by the Western Channel, (between Dudley and Rodgers' Island.) The **Northern Channel** (which is used by those who *come into* Passamaquoddy Bay and Friar's Roads through the Main Entrance) is half a mile wide and quite deep, with steep shores on both sides. *The* **Western Channel** *is used by those who come through Lubec Narrows.*

Estes' Head has been already described on page 17 as a bold, bluff, rocky headland, with its summit crowned with stunted fir. It is the eastern point of entrance to Broad Cove. When abreast of it, Shackford's Head, the western point of the entrance to Broad Cove, will be seen to the northeastward, about seven-eighths of a mile distant. It is a large, high, bluff head, its top covered with stunted fir, and on its southern side a low point making out with a sandy, water-worn face.

Burial Island.

On the southern side of the passage, about two hundred yards to the northwestward of Treat's Island, is Burial Island, low and grassy, with a few scattered trees on it. *It is five-eighths of a mile* **SW.** *by* **S.** ¾ **S.** *from Estes'* Head; which is here the width of the channel. *Well to the southwestward, and close in with the shore of* Seward's Neck, lie **Rodgers'** and **Major's** islands; the former of moderate height, with its summit densely wooded with small fir and spruce, and the latter presenting a smooth, round appearance, with a few low trees on top. It is about a quarter of a mile to the northward of Rodgers' Island.

Comstock Point.

On the western side of the entrance, nearly opposite to Shackford's Head, (from which it bears about **SW.** nearly three quarters of a mile distant,) is Comstock Point, low, sandy, covered with a bushy growth of trees, and quite bold-to. *It is the easternmost point of* **Seward's Neck,** and here the shores of the neck make a long curve *to the westward and then to the northward, forming a large cove, with good anchorage, called* **Small's**

Description of Pembroke River.

Cove. A low, sandy islet, crowned with small, bushy trees, lies nearly in the middle of the entrance to this cove, and is called **Cooper's Island.** From it a long line of ledges, mostly bare at half-tide, extends off to the northward nearly half a mile. They are known as *Cooper's Island Ledges*, and are not buoyed.

At Small's Cove there is quite a settlement—in fact, the whole of the shores of Seward's Neck are thickly settled and well cultivated from Lubec Mills to Gove Point.

Goose Island.

When abreast of Shackford's Head, a low, grassy island, with two small houses upon it, will be seen ahead and about a quarter of a mile off. This is Goose Island, and lies about half a mile off the Moose Island shore, and on the south side of the entrance to a large but shallow cove on the western shore of that island. This cove is dry at low water, with bad ledges and shoals obstructing its entrance, and is of no importance. Goose Island lies about a mile to the southward of the western end of the passage between Moose Island and the mainland.

Gove Point.

On the western shore the northern point of Seward's Neck is called Gove Point. It is low, and its extremity is covered with spruce, fir, beech, etc. A long, steep, shingly beach skirts the shore for nearly the whole distance between Small's Cove and Gove Point. This beach is convenient for vessels to haul out and examine their bottoms, and is frequently used for that purpose. The land is cultivated almost to the water's edge.

Birch Point.

On the eastern shore, about a mile to the northward of Gove Point, and bearing from it about **N. by W.**, is Birch Point, the southernmost point of the mainland on this side. It is high, and has its southeastern slopes cleared and cultivated to the summit, which is crowned with trees, and is known as **Lincoln's Head.** To the southeastward it extends into a low, sandy head, covered with grass, and having a solitary hut upon it. The head is easily recognizable by the peculiar cut in the woods which crown its summit. A large barn stands on the southern end of Birch Point; and three-quarters of a mile off the point, in about an **E SE.** direction, is *Half-Tide Rock*, bare at half-tide.

South Bay.

On the western shore, after passing Gove Point, a large and deep bay is opened, running to the southward. This is called South Bay, and extends to the southward nearly six miles, to the village of **West Lubec.** A small, low, grassy islet, called **Razor Island,** lies in the middle of the entrance, and farther up the bay are seen two large wooded islands known as **Hog Island** and **Long Island.** All of the shores of this bay are thickly wooded. It has plenty of water, but is rarely used,—there being as yet no trade upon its shores. A little over three miles above its mouth, and on the western shore, is the site of the lead-mines of the **Lubec Mining Company**; and, we believe, there is some slight trade in lumber.

Cobscook River.

Cobscook River empties into Cobscook Bay about two miles to the westward of Gove Point and the same distance **W SW.** from Birch Point, the entrance lying between Leighton's Point on the north and **Denbow's Point** on the south. Four miles above the entrance is what is called **The Falls,** situated on the North Branch, and very dangerous on account of the strong set of the water over them on the flood tide. The town of **Dennysville** is situated about six miles above The Falls, and has some lumber trade; but none but those thoroughly well acquainted with the dangers of the approaches, or furnished with an experienced pilot, dare attempt to go up this river. At Dennysville the stream is a mere creek.

The dangers of the navigation of the branches of the Cobscook River are such that no insurance company will take a risk on a vessel engaged in this trade.

Red Island.

Just above Birch Point, on the northern side of Cobscook Bay, lies **Red Island,** about half a mile from the eastern shore. It is rocky,—the rocks being of a peculiar red color, like that of red gravel,—and the top of the islet has a few stunted bushes upon it. It is very bold to, except on its northwestern side, where a ledge, bare at half-tide, makes out for about one hundred yards.

East Bay.

About a mile above Red Island is the entrance to East Bay, which makes in to the northward, between **East Point,** on the eastern shore, and Garnett's Head, which latter separates the bay from the entrance to Pembroke River. There is good water in it, and it affords excellent anchorage, but is otherwise of no importance. Its northern shores show a grassy head, called **Red Head,** with cliffs of the color of red gravel, backed by a handsome grove of trees.

Garnett's Head.

Garnett's Head is a high hill, partly wooded, with most of its slopes under cultivation. Its southwestern point is wooded with small birch and other trees and is quite steep-to. A house and barn, widely separated, are seen on the cleared portion of the head.

Above the entrance to Cobscook River the western shores of Cobscook Bay are gently sloping and all under cultivation.

Leighton's Head.

Leighton's Head, or **Leighton's Point,** as it is sometimes called, is the western point of entrance to Pembroke River, and is composed of gently sloping cleared lands with one or two houses on it. It forms the northern point of Cobscook River entrance. Northward from this point the western shores of Pembroke River are low, smooth, cleared and cultivated.

Coggins' Head.

Coggins' Head, which lies on the eastern shore, (the first head above Garnett's,) presents a bluff face on the water side, and has a few scattered trees upon it. Here are built the lower wharves of the Pembroke Iron Works, which are used in winter, and by vessels whose draught does not admit of their going up to the Works.

Passing Coggins' Head, we open a long narrow cove, called Coggins' Cove, with straight shores, rather steep on the southern side, and lower and more gently sloping on the northern banks. The northern shores are formed by a low, well-wooded head, called **Hersey's Head**, from which the cove is sometimes called **Hersey's Cove.** It is about seven miles above Estes' Head, and here is the common anchorage. **Coggins' Cove.**

Just above Hersey's Head is Hersey's Point. It is only about twenty-five or thirty feet in height, but is a very prominent, rocky and precipitous bluff, dotted with scattered clumps of trees, and with its rocks overhanging the stream. It is sometimes called **Small's Head.** Opposite to it, on the western shore of the river, lies **Small's Island**, a low islet, partly wooded, with a wharf and a small fish-weir built out from it. The river here is about half a mile wide. **Hersey's Point.**

Half a mile above Hersey's Point is a low, rocky point, covered with a growth of scrub pine and fir, and called **Hersey's Upper Head.** A ledge makes off from it in a southwesterly direction.

About a mile above Hersey's Point the river branches at what is called **The Divide**,—the western branch running northwestward to the western end of the town of Pembroke, and the eastern branch northeastward up to the Iron Works. The point separating the two at The Divide is called **Hardy's Point.** The landing of the town of Pembroke is about a mile and a half above Hersey's Point, and here vessels lie aground alongside the wharves at half-tide.

DANGERS

IN APPROACHING AND ENTERING PEMBROKE RIVER.

I. ***From the vicinity of Eastport.***—Leaving the anchorage at Eastport, bound up the Pembroke River, there will be seen, when abreast of Buckman's Head, a red spar-buoy on the western side. This is on Buckman's Ledge, which has about two feet at low water, and extends off from the head in a southerly direction about two hundred yards. The buoy is placed in three fathoms, on the southern end of the ledge, and is marked No. 2. ***Buckman's Ledge.***

Passing it, the course leads for Estes' Head, which may be passed close-to, and a red spar-buoy will be seen off the southern face of Shackford's Head. This buoy, which is marked No. 4, is placed to mark the southern extremity of Shackford's Ledge, making off from the head in a **S SE.** direction. It is in three fathoms, on the southeastern side of the ledge, and after passing it a line of ledges will be seen on the western shore making off to the northward from Cooper's Island. These are the Cooper's Island Ledges, are mostly bare at half-tide, and extend along the shore of Seward's Neck for about three-eighths of a mile from Cooper's Island. They are not buoyed, but a buoy will be recommended to mark them. ***Shackford's Ledge.*** ***Cooper's Island Ledges.***

Passing these ledges another red spar-buoy will be seen a little over a mile to the northward, off the western end of Goose Island. This marks Goose Island Ledge, with three feet at lowest tides, and lying to the westward of Goose Island, on the eastern side of the channel. The buoy is placed in eighteen feet water on the *northern* side of the ledge; but a better position would be on the *western* or *channel end* of the shoal. Mariners beating to windward must bear in mind the position of this buoy. ***Goose Island Ledge.***

When past Goose Island the course turns more to the westward, past Gove Point on the south and Birch Point on the north, and over towards Red Island; and then turns to the northward towards Garnett's Head, the eastern point of the entrance to Pembroke River. On the western shore, south of this head, will be seen a black spar-buoy. This is on Clarke's Ledges, which lie about a quarter of the way from the western shore, and are out at half-tide. The buoy is the first black buoy met with in this passage,—is marked No. 1, and placed in three and a half fathoms on the eastern end of the ledges. ***Clarke's Ledges.***

Gangway Ledge, which lies **SW.** by **W.** from Garnett's Head and is awash at low water, is also marked by a black spar-buoy, (No. 3,) which must be left to the westward. It is placed **N NE.** of the shoal, in five fathoms, and may, therefore, be approached closely. ***Gangway Ledge.***

Two-Hour Rock is the next danger met with after passing Coggins' Head. It is out at one-third ebb, and lies on the western shore, a short distance below Hersey's Head. The buoy, which is black and marked No. 5, is in six feet water, on the edge of the rock, and must be left to the westward, as there is no passage between it and the shore. ***Two-Hour Rock.***

After passing Two-Hour Rock, a black spar-buoy will be seen to the northwestward. This is on the western end of The Middle Ground, which has two feet at low water. When in position the **Winter Wharves** bear from the buoy **N NE.**, and after passing this there are no dangers until up with Hersey's Upper Head, off which a red spar-buoy will be seen. This buoy is on the southwestern end of *Hersey's Upper Head Ledge*, which is covered at half-tide. The buoy is marked No. 8, placed in seven feet water, and must be left to the eastward. When past it, steer up for the eastern or western branch of the river. ***The Middle Ground.***

Hardy's Point Ledge. On approaching Hardy's Point a black spar-buoy will be seen to the southward of it, which marks the end of a half-tide ledge called Hardy's Point Ledge. The buoy is marked No. 9, bears about **S.** by **E.** from Hersey's Upper Head, and there is no passage between it and the point.

In the eastern branch, which leads up to the Iron Works, the eastern edge of the channel is marked by a red spar-buoy, which serves to keep vessels off *the flats making out from the eastern shore.* There are several buoys above Hardy's Point; as on *Bridge's Ledge* a black spar, No. 11, on *Small's Point Ledges* a red spar, No. 10, on *Hardy's Upper Point* a black spar, No. 13, and on *Stoddard's Point* a red spar, No. 12; but, as it is impossible for vessels to pass above Hardy's Point without an experienced pilot, and rarely without a steam-tug ahead, (and then only at high water,) mention of them is unnecessary.

All the buoys in the Pembroke above The Middle Ground are taken up in the winter.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PEMBROKE RIVER.

I. ***From the vicinity of Eastport.***—Pass Estes' Head close aboard, and when abreast of it, steer **W.** by **N.**, which course continue for about half a mile, or until the sandy cliff on the south end of Shackford's Head bears **N.** ¾ **W.**, when steer **NW.** ¾ **N.**, (**NW.** by **N.** if the tide be flood,) which course will lead past Shackford's Head and up with Gove Point. On this course, when past Cooper's Island, the shore of Seward's Neck must not be approached nearer than five hundred yards, as there are *several sand-spits on that side,* over which the tide runs violently. *If intending to anchor in Small's Cove,* as soon as you have passed the northern end of Cooper's Island Ledges haul right into the cove. There is nothing in the way, and you may anchor at discretion in good water. *But if bound up river,* continue the **NW.** by **N.** course up to Gove Point, when steer **N NW.** for Red Island, passing it close-to. Keep close to it to avoid being set up into the Cobscook River by the very strong flood tide, which here runs with great velocity; and when abreast of **Eastern Point,** (the eastern point of entrance to East Bay,) steer **NW.** ¼ **N.** for Garnett's Head, which you must pass close-to. Always keep the eastern shore aboard in this vicinity, as the western shore is ledgy and shoal, as may be seen by the black buoys. When abreast of Garnett's Head, steer **NW.** by **W.** ¾ **W.**, and when a little above the head, haul up **NW.** ½ **W.** for the black buoy on Gangway Ledge. This course will pass to the westward of and close to a long point with a fish-weir on it, behind which the land rises to a high, steep hill, with clumps of trees upon it and a group of houses at its base. This is **Coggins' Head,**—(see page 34,) and here are built the **Lower** or **Winter Wharves** of Pembroke. Pass to the eastward of the Gangway buoy, about one hundred yards distant, and steer **NW.** ½ **N.**, leaving the black buoy on Two-Hour Rock to the westward; and when fairly opposite to Hersey's Head round to and come to anchor in from three to four fathoms. Above this, vessels, even of light draught, cannot go without lying aground at low water. *But, intending to go up as far as Hardy's Point,* continue the course up river, passing to the westward of the red buoy on Hersey's Upper Head Ledge. When up with the black buoy on Hardy's Point, and bound up to the Iron Works, steer between that buoy and the red one on the eastern side of the entrance.

DANGERS

IN APPROACHING AND ENTERING PEMBROKE RIVER.

II. ***Coming from the Southward, between Treat's Island and the mainland.***—To the northward of Lubec Narrows there are no dangers in this passage until past Dudley Island, near ***Paddy's Ledge.*** which is Paddy's Ledge, a bare rock, lying about three hundred and fifty yards off the Treat's Island shore and a quarter of a mile **N.** of Dudley Island. It is tolerably bold-to, and forms the southern end of *a large ledge bare at low water,* about three hundred yards long in a **N.** by **W.** and **S.** by **E.** direction, and which has, besides Paddy's Ledge, several other bare rocks upon it. The principal of these is *Gull Rock,* lying about sixty yards to the northward of Paddy's Ledge, and surrounded by shoal water. There is, however, a good passage, with about four fathoms of water, between this ledge and Treat's Island; but neither ledge is buoyed.

The northwestern point of Treat's Island is shoal to the distance of nearly a quarter of a mile. At the western end of this shoal there is a small island, called **Burial Island,** (see page 25.) It is low, covered with grass, and has three or four trees and a single house upon it. *A bare rock, not named, lies to the northeastward of it.*

On the western side of the channel, nearly due **W.** from Burial Island, and about three-eighths of a mile from the shore of Seward's Neck, there is *a group of ledges without buoys, bare at half-tide,* lying to the northeastward of Major's Island,—the northernmost being a quarter of a mile distant and the southernmost about three hundred and fifty yards. They always show themselves, and are quite bold-to. The name *Major's Island Ledge* has been suggested for them. The channel between these ledges and Burial Island is three-eighths of a mile wide. ***Dangers--Pembroke River.***

After passing Burial Island there are no dangers until up with Shackford's Head, when you must look out for Shackford's Ledge, which makes off from the head in a **SSE.** direction. A red spar-buoy, marked No. 4, is placed on the southern end of the ledge, in good water. Passing to the westward of it, the course leads to the northwestward, between Shackford's Head and Cooper's Island, and to the eastward of a line of ledges called *Cooper's Island Ledges,* mostly bare at half-tide. These ledges extend to the northward from Cooper's Island for about three-eighths of a mile, and are not buoyed. ***Shackford's Ledge.***

After passing Cooper's Island Ledges, a red spar-buoy will be seen a little over a mile to the northward, off the western end of Goose Island. This marks Goose Island Ledge, which has three feet at lowest tides, and lies to the westward of Goose Island, on the eastern side of the channel. The buoy is placed in eighteen feet water on the *northern* side of the ledge, and not to the *westward,* as it should be; and this must be borne in mind when beating to windward. ***Goose Island Ledge.***

When past Goose Island, the course turns more to the westward, leading toward Red Island, and then to the northward, toward Garnett's Head, the eastern point of the entrance to Pembroke River. On the western shore, to the southward of this head, will be seen a black spar-buoy. This is on Clarke's Ledges, which lie about a quarter of the way from the western shore and are out at half-tide. This is the first black buoy met with in the bay. It is marked No. 1, and is placed in three and a half fathoms, on the eastern end of the ledges. ***Clarke's Ledges.***

The dangers in Pembroke River above Garnett's Head are described on pages 35–36.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PEMBROKE RIVER.

II. ***From the Southward, between Treat's Island and the mainland.***—When through Lubec Narrows, steer **NW.** $\frac{3}{4}$ **N.** until past Dudley Island, and its northern point is brought to bear **E.** $\frac{7}{8}$ **S.**, in range with the middle of Friar's Head. Pass the western point of the island at a distance of about four hundred yards and haul up **N.** $\frac{1}{4}$ **E.** for the middle of Broad Cove, and continue this course until Estes' Head bears **E.** by **N.** $\frac{3}{4}$ **N.**, when steer **NW.** $\frac{3}{4}$ **N.**, with Treat's Island over the stern bearing **SW.** $\frac{3}{4}$ **S.** This course will lead past Shackford's Head and up to Gove Point. When past Cooper's Island, keep about five hundred yards from the shore of Seward's Neck, as there are *several sand-spits lying along that shore,* over which the tide runs with great velocity. *If intending to anchor in Small's Cove,* haul into it as soon as the northern end of Cooper's Island Ledges is passed. *If bound up the river,* continue the course **NW.** by **N.** (or **NW.** $\frac{3}{4}$ **N.**, according to tide) until abreast of Gove Point, when steer **NNW.** for Red Island, which pass close-to. (It is necessary to keep this shore aboard in order to avoid being set up into Cobscook River by the very strong flood tide, which here runs with great rapidity.) Continue the **NNW.** course past Red Island until abreast of East Point, when steer **NW.** $\frac{1}{2}$ **W.** for Garnett's Head, which pass close-to. Keep the eastern shore aboard in this vicinity, as the western shore is ledgy and shoal. When abreast of Garnett's Head, steer **NW.** by **W.** $\frac{3}{4}$ **W.**, and when a little above the head haul up **NW.** $\frac{1}{2}$ **W.** for the black buoy on Gangway Ledge, and proceed as directed for Pembroke River, on the preceding page.

Pembroke River is called, on the old county maps, **Pemaquan River** from its source in **Pemaquan Lake** to Hersey's Head, and from Hersey's to Garnett's Head it is called **Pemaquan Bay.** It is now, however, generally known as Pembroke River throughout its entire length.

TIDES.

No vessels should ever attempt to enter the bay or its rivers without a pilot, whose local knowledge of the set and turn of the tides will be all that is needed for safe navigation. It may be as well, however, again to call attention to the strong set of the flood into Cobscook River, which compels vessels to keep close to the eastern shore. The tide also runs violently over the sand-spits off Seward's Neck. The tide tables of Eastport Harbor, on page 27, will serve for the lower portion of this bay.

VARIATION OF THE COMPASS.

An approximate value of the magnetic variation for the entrance to Lubec Narrows, in 1879, is 18° 27′ W. The annual increase is between 2′ and 3′.

ICE IN EASTPORT HARBOR.

This harbor is never so much obstructed by ice, even in severe winters, as to interfere with the movements of either steamers or sailing-vessels. Friar's Roads are not used as an anchorage in winter; and Broad Cove, which is the real harbor, is always free. The great rise and fall of the tides keeps the wharves clear; and the only formations in Friar's Roads are fields of "drift-ice" of small extent, which, coming from the St. Croix and adjacent waters, pass through the Roads to sea; and these are neither heavy nor extensive. The rapidity of the tidal currents is such as to effectually prevent local formations, and also to overcome the influence of the winds on "drift-ice."

COAST OF MAINE

TO THE WESTWARD OF WEST QUODDY HEAD.

From West Quoddy the coast has a general direction about **W.** by **S.** ¾ **S.** for about five miles to Bayley's Mistake, and is for the most part high, rocky and barren, with precipitous faces to seaward, and quite bold-to, except on the south side of West Quoddy, where the land is lower, and houses are visible just back of the beach.

BAYLEY'S MISTAKE

is a large cove running about **N NE.** and about a mile long. It is of no importance as a harbor of refuge except in cases of the greatest necessity. On approaching it from the eastward, **Jim's Head**, the eastern point of entrance, will be seen and recognized as a bold, bluff and rocky head, with leafless fir and spruce on top. The harbor will be recognized by a flat mountain with three peaks, which appears nearly in the middle and standing some distance back from the shore. Several houses will be seen at the base of this mountain.

The entrance to Bayley's Mistake is between Jim's Head on the east and **Balch's Head** on the west. The latter is lower than Jim's Head, more gently sloping, and has a few trees on it.

DANGERS

IN APPROACHING AND ENTERING BAYLEY'S MISTAKE.

In the middle of the entrance to this cove lies a ledge, bare at two hours' ebb, called *Bayley's Ledge*, which is the only danger encountered in entering, and is not buoyed.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BAYLEY'S MISTAKE.

As before remarked, this harbor must not be attempted unless in case of the most urgent necessity. It is only fit for light-draught vessels, and is very rarely used. To enter it, run close along shore until Jim's Head is made, which steer for, rounding it close-to, and keep to the northward, anchoring when well inside the head.

Into this harbor a depth of four fathoms can be taken; but, being open to southerly winds, it is entirely unsafe for anchorage. In moderate weather, with the wind to the northward, vessels of light draught may run in here to wait for a favorable tide. But in heavy southerly weather, unless it be the only chance of saving the ship, the entrance must not be attempted.

HAYCOCK HARBOR.

From Bayley's Mistake to Haycock Harbor the distance is not quite three-quarters of a mile, and the course about **SW.** by **W.** It is improperly called a harbor, as it is a mere cove, affording no shelter except in the calmest weather. In fine weather vessels whose masters are well acquainted with the cove and its dangers sometimes run in, and lie aground at half-tide. But no one should ever attempt to remain in it if there is any likelihood of foul weather. The water is shoal and the shores high and well wooded.

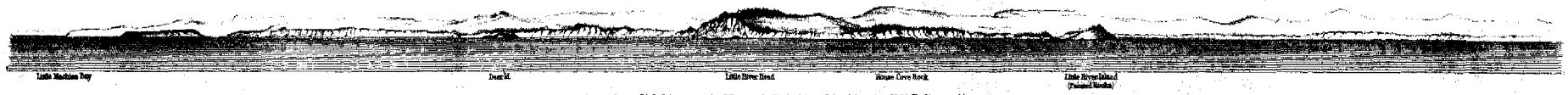
MOOSE RIVER.

The entrance to this river (which is sometimes called **Moose Cove**) is about a mile to the westward of Haycock Harbor. It is not fit for a harbor of refuge, and should not be used as such unless in very urgent cases, as the entrance is obstructed by ledges, (none of which are buoyed,) the channel is narrow, there is no shelter except in northerly winds, and the holding-ground is not good. Vessels caught by foul weather in this vicinity can always make Little River, six miles to the westward,—an excellent harbor in all winds.

On approaching Moose River, a high, bluff, well-wooded head, called **Eastern Head**, will be seen on the eastern side of the entrance. Its highest point is well back from the shore, and is grassy, with a number of small spruce and fir trees upon it, while the western point is low and rocky. The western shores are lower than the eastern, and are mostly covered with bushes. There is a small settlement at the head of the river, which has grown up around the mills.



Approaches to Little River from the Eastward, the Lt.Ho. bearing N.W. by W. distant 3 Miles.



Approaches to Little River from the Westward, Little River Island bearing N.N.E. distant 2¼ Miles.

DANGERS

IN APPROACHING AND ENTERING MOOSE RIVER.

Long ledges make off from Eastern Head to the southwestward for a considerable distance, and are generally called *Eastern Head Ledges*. They are mostly bare at half-tide, and are not buoyed. If they are avoided the harbor may be entered safely.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MOOSE RIVER.

The only rule for entering Moose River is to keep the western shore aboard until well past Eastern Head Ledges, and anchor when well inside. In fine weather a pilot may generally be obtained by making the usual signal; but it is at best a poor harbor, and is rarely entered; although five fathoms may be easily taken into it.

LITTLE RIVER.

From Moose River the coast has a general direction **SW. ¼ W.** for nearly four miles, to **Sandy Point**, and thence **W.** by **S. ½ S.** for a little over two miles, to the entrance to Little River. The shore is generally high, rocky, barren and steep-to. Just to the eastward of this entrance, and very noticeable, will appear **Long Point**, high, rocky, and fringed with a few stunted spruce and fir. To the westward of this is seen, first, **Schooner Brook Head**, high, bare and rocky, and next, to the westward, **Otter Head**, the eastern extremity of The Lookout, which is also rocky, but lower.

The entrance to Little River is thirteen miles **SW.** by **W. ½ W.** from West Quoddy Head. It is an excellent harbor, very little obstructed, and may be safely entered by strangers by following the sailing directions. It runs nearly **NW.** by **W.** for about a mile and a half, but is navigable only up to the town of Cutler, situated on its northern bank, just above its mouth. It is probably more frequently resorted to as a harbor of refuge than any other entrance between Englishman's Bay and Eastport, as it affords excellent anchorage for vessels in all winds. The bottom is stiff grey mud.

It must be remarked that little in the shape of stores or provisions can be obtained here,—the residents mostly living on fish, of which they obtain only enough for their own consumption.

Vessels bound to Eastport and St. John may here obtain good pilots. The coast is well known to many of the inhabitants, who fish along shore and are acquainted with every inlet and cove.

Little River entrance is between Eastern Knubble on the north and Little River Head on the south, and the most prominent objects seen on approaching it from the eastward will be the light-house and bell-tower on Little River Island. There are two channels—one leading between Eastern Knubble and Little River Island, called the **Main Channel**; and one between the island and Little River Head, called the **Western Channel**. The latter is shoal but has no obstructions.

Eastern Knubble.

Eastern Knubble is a high, precipitous and rocky head, crowned with a few spruce and fir trees; and to the eastward of it there will be seen a high, square, bare, tower-like head, called **Great Head**, which is a good landmark if the coast is made in thick weather and the light-house cannot be seen.

Little River Head.

Little River Head, on the southwestern side of the entrance, is of moderate height. Its northern bluff is wooded with a small growth of fir, but the rest of the surface has been cleared and the stumps of the trees left standing; which, being whitened by exposure, present the appearance of headstones in a graveyard;—this very peculiar appearance marking the head with certainty. The rocks on its southern and eastern faces have large white spots painted on them just below the top of the cliffs, to enable vessels making the harbor from the westward to recognize the entrance, when, from the peculiar formation and trend of the shore, no opening can be seen until to the eastward of Little River Head. These painted rocks are also useful to vessels coming from the eastward in thick weather; for Schooner Brook, which is just to the eastward of the mouth of the river, is so much like the latter in appearance that it would be apt to be mistaken for it in such weather, if it were not for the painted rocks. Vessels have sometimes made this mistake and some have been lost,—Eastern Knubble, which looks a good deal like Little River Island, having been taken for that island and a course shaped for the harbor.

Little River Island and Light-house.

Little River Island lies in the middle of the entrance to the river. It is small and rocky and crowned with a thick growth of stunted fir. On its northwestern side the land is cleared and gently sloping, and in the middle of this cleared space is built the light-house, called Little River Light-house. It is a stone tower, painted white, attached to the eastern end of the keeper's dwelling, which is also of stone. The tower is twenty-eight feet high, and shows a fixed white light, of the fifth order of Fresnel, varied by flashes at intervals of a minute and a half, from a height of forty feet above the sea, visible eleven miles. This light is not visible on any bearing to the eastward of **N.** Its geographical position is

Latitude ..... **44° 39′ 45″ N.**
Longitude ..... **67° 12′ 5″ W.**

Fog-signal.

A white pyramidal structure about two hundred feet **S.** by **E.** from the light-house contains the fog-bell, which is struck by machinery twice a minute.

The rocks upon Little River Island also have white spots painted upon them. The Main Channel is between Little River Island and Eastern Knubble, although there is a good channel with eight feet at low water on the southern shore, between the head and the island. (See preceding page.)

On the northern bank of the river, nearly abreast of the light-house, a high, steep hill, called **The Lookout**, is seen just back of the shore.

Eastern Head. Just to the westward of Eastern Knubble is Eastern Head, high, precipitous, and crowned with trees. The banks of the northern shore of the river are all steep and rocky.

Ackley's Point, a little below the town, is a high, rocky and barren bluff, on which there is one house, painted brown, standing in a grove of low firs.

The southern shores of the river are lower than the northern, covered with bushes, and here and there groups of houses close to the shore-line. Just to the westward of Little River Head is another smaller bluff, called **Little Head**, also rocky, steep, and crowned with fir.

The town of **Cutler** is built on the north bank, a little above the light-house, on high ground, extending from the shore to the foot of the hills behind. In **The Narrows**, just above the town, are the remains of a mill-dam.

The Western Channel into this river is unobstructed, and about four hundred yards wide, with eight feet at low water.

Considerable lumber business is done in Cutler, and there is also some ship-building.

DANGERS

IN APPROACHING AND ENTERING LITTLE RIVER.

Eastern Head Ledge. I. ***Coming from the Eastward.***—In coming into this harbor beware of Eastern Head Ledge, bare only at low spring tides, and lying off Eastern Head about one hundred yards from the northern shore. The ledge runs **NW.** and **SE.**, is about fifty yards long, and is not buoyed; but a buoy will be recommended to mark it; as, if properly marked, the entrance would be perfectly safe for strangers.

Transport Ledge. Transport Ledge, which lies in **Cates' Cove**, is a foot out at low water, and lies about fifty yards from low-water line, off **Transport Point**, the eastern point of Cates' Cove. It is not, therefore, in the way, except for vessels using the Western Channel, and is not buoyed.

These are all the dangers in the approaches to this harbor by the Main Channel.

Long Ledge. In the Western Channel the only danger at the entrance is Long Ledge, making off from the southwestern shore of the river abreast of Little River Island, and for the most part dry at low water. Between this ledge and the head is a small cove, generally known as **Long Ledge Cove.**

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING LITTLE RIVER.

I. ***Coming from the Eastward.***—Bring the light-house to bear **W.** $\frac{3}{4}$ **S.** and steer for it until close-to, when, if bound in by the Main Channel, pass to the northward of it, keeping it close aboard to avoid being set on Eastern Head Ledge. When past the island, steer directly for the low land at the head of the river, having the church in Cutler a little to the northward of the course. Anchor anywhere abreast of the town, but the best anchorage is near its lower end, just above Ackley's Point, where the depth is from four to five fathoms and the holding-ground excellent, (being composed of stiff grey mud,) but the channel is somewhat narrow.

If coming in by the Western Channel, pass between Little River Head and the island, keeping about midway of the passage, and when abreast of the western end of the island gradually haul over to the northern shore. Through this channel eight feet at mean low water can be carried.

The entrance to Little River bears **NW.** by **W.** $\frac{1}{4}$ **W.** from **Southwest Head**, the southern point of Grand Manan, distant a little over twelve miles. Vessels coming from that vicinity may, when about a mile and a half to the southwestward of the head, steer **NW.** $\frac{3}{4}$ **W.**, which, if made good, will bring them up with Little River Light-house, when the directions given above must be followed.

DANGERS

IN APPROACHING AND ENTERING LITTLE RIVER.

Eastern Head Ledge. II. ***Coming from the Westward, along shore,*** there are no dangers in the approaches, the shores being tolerably bold-to and safe; but on entering the river look out for Eastern Head Ledge, on the eastern shore, about one hundred yards to the southward of Eastern Head. It lies **NW.** and **SE.**, is about fifty yards long, and at low spring tides is bare.

If coming in by the Western Channel, between the island and the head, look out for Long Ledge, which makes off from the southern shore to a considerable distance, opposite to Little River Island, and is for the most part dry at low water. When past this, edge over towards the northern shore to avoid *Transport Ledge,* which lies in Cates' or **Willard's Cove,** about fifty yards from the low-water line. It is a foot out at low water. ***Long Ledge.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING LITTLE RIVER.

II. ***Coming from the Westward, along shore.***—When Libbey Island light bears **N NW.,** distant three miles, steer **NE.** by **E. Easterly** until Little River Island bears **N NE.** and the southern point of Deer Island (on the eastern side of the entrance to Little Machias Bay) bears **W.** by **S.** ¼ **S.** Now steer **NE.** by **N.** ¾ **N.,** nearly for the eastern point of Little River Island. Give this point a berth of about one hundred and fifty yards, and, as soon as the light-house and bell-tower are open, haul up gradually until you head **N.,** having the island to the westward. When nearly abreast of the light-house, and the river is fairly opened, haul up gradually to **NW.** and run directly in for the low land at the head of the river, having the church a little to the northward of the course; and when abreast of Ackley's Point, round to and come to anchor. Or, wishing to proceed farther up, anchor anywhere off the town, with good holding-ground. But remember that, the farther up, the less water, as the channel shoals rapidly. Off Ackley's Point the depth is from four to five fathoms.

In passing Little River Island give it a berth at all times of one hundred and fifty yards.

The flood tide along shore sets to the eastward and the ebb to the westward. The current runs with considerable velocity, so that few vessels can beat against it. On the other hand, a vessel with a favorable tide can make excellent headway, even in a very light head-breeze.

LIGHT-HOUSE.

NAME.	Latitude N.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		m. s.	Feet.	
Little River Light-house.....	**44 39 45**	**67 12 5**	**4 28 48.3**	**F. V. F.**	**1 30**	**40**	**11**

VARIATION OF THE COMPASS.

The approximate variation for the year 1879 is **17° 34′ W.,** and the annual increase about **2′.**

ICE IN LITTLE RIVER.

This harbor is unobstructed by ice even during the severest winters, and is accessible at all times for both sailing-vessels and steamers. The absence of heavy formations may be attributed, as in Eastport, to the strength of the tidal currents; but besides this influence, the course of the river (nearly **NW.** and **SE.**) permits the prevalent winds from the northward and westward to assist the current of ebb in carrying the ice to sea, and prevents the current of flood from bringing ice in from outside.

LITTLE MACHIAS BAY.

Two miles to the westward of Little River Head is the entrance to Little Machias Bay, which is of little importance, although having tolerably good water; as its navigation is rendered dangerous by the ledges and rocks off its mouth, and it is open to southerly and southeasterly winds. Between Little River and this bay the coast has a general trend about **W.** ¼ **N.,** but its outline is irregular, with several indentations. The land is high, steep and thickly wooded.

The entrance to the bay is between **Dennison's Point** on the east and **Davis' Point** on the west, and is three-quarters of a mile wide, but much obstructed by islets and ledges, rendering the passage unsafe for strangers. It is three-quarters of a mile long **N.** by **E.** and **S.** by **W.,** wider at its head than at its mouth,—being a mile and a half wide at its northern end, where there is a small settlement known as **Little Machias.** The shores are mostly rocky and barren,—the eastern shore being dotted with houses, but the western bank very thinly settled. Most of the land is wooded with fir trees.

Deer Island, which lies a mile to the eastward of the entrance and close in with the shore, is rocky and wooded with the usual growth, and is about a quarter of a mile long in a **NE.** and **SW.** direction. Its shores are bold-to. The channel from the eastward passes between the island and the Black Ledges on the western shore. **Deer Island.**

Cape Wash, on the western shore, is a rocky islet, lying close in with Davis' Point, and has one house on it, near its northern end.

The Old Man. The Old Man is a small islet lying three-quarters of a mile to the southward (**SE.** by **S.** ½ **S.**) from Cape Wash, a mile and a quarter **SW.** by **W.** ½ **W.** from Deer Island, and a mile and a half from Cross Island, at the entrance to Machias Bay. All of these islets are bold-to.

When inside the bay, the best anchorage will be found on the western shore, in a depth of from two to five fathoms; but it is unsafe ground on account of being open to the southeastward.

The *Black Ledges* lie exactly in the middle of the entrance, nearly midway between Cape Wash and Deer Island, and are very dangerous. They are out at low water, and may be avoided by keeping either shore close aboard. There is no passage between Cape Wash and Davis' Point, but there is said to be a good channel between it and the Black Ledges.

Vessels entering Little Machias Bay from the eastward should pass to the southward and eastward of Deer Island and steer up to the northwestward, toward Dennison's Point, keeping it a little to the northward of the course until past the Black Ledges. When past these, they may alter their course a little to the westward; and, when fairly in the bay, steer over towards the western shore and anchor according to draught. These are the only directions that can be given for this bay, which is of no use as a harbor of refuge and is never entered by strangers. Four fathoms at mean low water can be taken up to the anchorage; but it must be remembered that the Black Ledges are not buoyed.

MACHIAS BAY.

Just to the westward of Little Machias Bay lies a large, high, rocky island, called Cross Island, on the western side of which is the main entrance to a large arm of the sea, known as Machias Bay. It is six miles long and from two and a half to four miles wide, and receives at its northwestern end the waters of Machias River. Its entrance is forty-six miles **NW.** ½ **W.** from Bryer's Island Light-house, twenty-four miles **NW.** by **W.** ½ **W.** from Gannet Rock Light-house, ten miles and a half **NW.** ¾ **W.** from Machias Seal Island Light-houses, and twenty-one miles **W SW.** from West Quoddy Head.

The entrance to Machias Bay is between Cross Island on the east and Libbey Island on the west, and is nearly two miles and a half wide. There is, however, a good channel, though unsafe for strangers, between Cross Island and the mainland to the eastward;—the channel leading to this latter passage passing between The Old Man and Cape Wash, and thence towards **Mink Island,** which is left to the westward, after which the passage is clear. This entrance is called **Cross Island Narrows,** and has several bad ledges in it.

The town of **Machiasport** is situated on the western bank of Machias River, near its mouth, and the city of Machias on the south bank of the same river, about four miles above the port. It has a very large lumber trade, some ship-building, and is the county seat of Washington County.

Cross Island. On the eastern side of the main entrance to Machias Bay lies Cross Island, a very remarkable looking island, crowned with a thick growth of sickly and stunted fir. It is a perpendicular wall of dark rock;—its sides being so bold-to as to allow of a vessel running alongside anywhere from its eastern to its southwestern end, where *a large reef makes out,* which runs nearly a mile and a quarter in a westerly direction. The island lies **E.** and **W.,** and is two miles long and about a mile and a half wide. Three small islets lie off its eastern shore in a line nearly **N.** and **S.** from each other;—the northernmost, called **Scotch Island,** lying on the south side of the eastern entrance to Cross Island Narrows, and the other two, under the common name of **Double-Headed Island,** being connected at low water. They are all tolerably bold-to.

The northern point of Cross Island is called **Quaker Head,** is of moderate height, and covered with spruce and fir. The western point is known as **Western Head,** and is also wooded and of moderate height. Between this head and another to the eastward of it a small cove makes into the northern shore of the island, called **Northern Harbor,** and affords good anchorage, except in northerly and northwesterly winds.

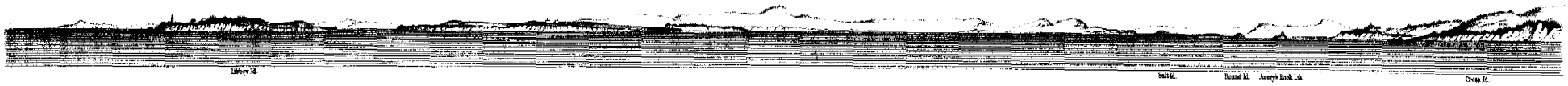
Libbey Islands. Libbey Islands are two rocky islands on the western side of the main entrance, lying **NE.** and **SW.** of each other, and, at low water, nearly joined by reefs. They lie on the western side of the main entrance. The western and larger island, which is about five-eighths of a mile long and quite narrow, is entirely bare of trees, but has two houses on its summit near its northern end. The eastern islet, which also marks the eastern side of the western entrance, has a few dead spruce and fir near its northern end, but is otherwise rocky and bare of vegetation.

Libbey Island Light-house. Libbey Island Light-house is built on the west end of the westernmost island, and is a guide not only to Machias Bay, but also to Mason's or Englishman's Bay, to the westward. The light-house is a granite tower, thirty-five feet high, and the keeper's dwelling is painted brown. The light is a fixed white light, of the fourth order of Fresnel, and is shown from a height of fifty-two feet above the sea, visible twelve nautical miles. Its geographical position is

Latitude ..... **44° 34′ 5″ N.**
Longitude ..... **67° 22′ 2″ W.,**

and it bears from—

	Miles.
Southwest Head, (Grand Manan,) W. by N.	**20**
Gannet Rock Light-house, W NW.	**25**
Machias Seal Island Light-houses, NW. ¾ W.	**12**
Bryer's Island Light-house, NW. ½ W.	**46**
Seal Island Light-house, (off Cape Sable,) NW. by N. ¾ N.	**92**
Mount Desert Rock Light-house, NE. by E. Easterly	**49**



Entrance to Machias Bay from the Eastward, Libbey Id. Lt. Ho. bearing N. W. ¼ W. distant 3¼ Miles.



Entrance to Machias Bay from the Westward, Libbey Id. Lt. Ho. bearing N.E. by N. distant 2¼ Miles.

There is a fog-bell near the light-house, supported by a wooden framework and struck by machinery. **Fog-signal.**

Passing in by the main entrance, there will be seen to the westward, about a mile to the northward of Libbey Islands, a barren, rocky island of moderate height, covered with a thick growth of small fir, except at its southern end,—where is a remarkable round, bluff head with a white face, called **Stone Head.** The island is called Stone Island, and is on the western side of the western channel. **Stone Island.**

Half a mile to the westward of Stone Island lies Starboard Island, or, as it is frequently called, from the name of its owner, **Brown's Island.** It is rocky and nearly bare, and is remarkable for a high, bare, precipitous face at its northeastern end, which has a few spruce clinging here and there to its sides and summit. It is a little over half a mile from shore, and about twelve hundred yards to the westward of Stone Island; but strangers should not attempt to pass between this island and the mainland. Starboard Island has a group of houses and a wharf on its southwestern end. A long sand-spit or shingly reef, which makes off from Point of Main towards the island and extends nearly over to it, forms a good harbor for vessels of light draught in southerly and southeasterly winds. **Starboard Island.**

Point of Main, which is the southern extremity of the mainland on the western side of Machias Bay, is high, bare and rocky. A mile and a half to the northward of it is the entrance to Howard's Bay, which will be opened as soon as you are abreast of Stone Island. It is a beautiful cove, perfectly unobstructed, and has deep water; but is, unfortunately, open to southerly and southeasterly winds. It runs about **N.** and **S.** for three-quarters of a mile to the base of a high, steep, rocky mountain, known as **Howard's Mountain,** which hill may be recognized by its perpendicular faces to the eastward and southeastward. At the head of the cove is a beach composed entirely of small, rounded pebbles suitable for ballast. Vessels, if obliged to anchor in this bay, should lie close in under the eastern shore, where there is a turn in the trend of the shores into a small cove on the eastern side, making a fair lee in easterly and southeasterly winds. **Howard's Bay.**

Howard's Point is the eastern point of the entrance to Howard's Bay, and is high and wooded, as is also all of the shore between the bay and the entrance to Buck's Harbor, which is a mile and a quarter to the northward. Bare, rocky summits crop out here and there from among the trees. **Howard's Point.**

Buck's Harbor, which is an excellent harbor of refuge, with from three to six fathoms water, lies on the western shore of Machias Bay, about a mile and a quarter above Howard's Point and four miles above Libbey Island Light-house. The entrance to it is between Buck's Head on the south and Bar Island on the north, and is about three hundred yards wide. **Buck's Head** is a thinly wooded head of moderate height, descending on the east to a low, bare, rocky point; but, if entering the harbor, the head on that side will be found very abrupt and bold. A small, rocky islet, destitute of vegetation, lies off the head, about two hundred yards distant, and there is a line of ledges inside of it, to which the common name of *Buck's Head Ledges* is given. **Buck's Harbor.**

The northern side of the entrance to Buck's Harbor is formed by **Bar Island,** a high, rocky island, covered with small pine and spruce trees, and with precipitous faces, except at its southeastern end, where it descends gradually to a low, rocky point. The harbor is an excellent anchorage, except in southeasterly winds, and is much used by fishermen. The entrance, between Bar Island and Buck's Head, is obstructed only by the ledges above mentioned, which are bold and always show themselves. An excellent anchorage exists on the northern side of Bar Island, between it and Buck's Neck,—the latter being a low, cleared and grassy neck of land at the head of the harbor, and separating the north and south branches of the cove. It is low, nearly bare of trees, under cultivation, and thickly settled. Between this neck and Bar Island is formed a beautiful square basin, with excellent anchorage in all winds in from six to ten feet water. Mariners should note this, as there is nothing to prevent a stranger from entering this place and coming to anchor. Sailing directions will be given in the proper place. **Buck's Neck.**

Just to the eastward of Bar Island is another islet, called Yellow Island, remarkable for being composed of nearly white rocks. Its eastern end is formed by a high head called **Yellow Head,** which is high and bare, except on top, where grow a few stunted fir trees. Passing the head, there will be opened a larger island to the northward of it, and a little nearer the western shore, called **Bare Island,** and made conspicuous by two round, bare, rocky heads rising from the sand beach. The northern head is high and precipitous, the southern merely a huge boulder; and a few stunted fir trees cling around their bases. The rest of the island is low, and fringed with rocks except at its northern end, where there is a grove of small fir. **Yellow and Bare Islands.**

The main channel leads between Bare Island and **Chance's Island,** which is nearly due **E.** of it and a mile and a half distant. It lies on the eastern side of the bay, about three-eighths of a mile to the southwestward of the extremity of Sprague's Neck on the eastern shore, and is round, thickly wooded and of moderate height. Long dry ledges run to the southward from its southern end. Sprague's Neck is a long, narrow peninsula of the mainland, making out into the bay about a mile, thickly wooded and of moderate height. It is two and a quarter miles above Quaker Head, and the mainland to the southward of it is all thickly wooded. Its western extremity is a low, sandy point, with water-worn faces and scattered trees. **Sprague's Neck.**

On the western shore of the bay, about half a mile to the northward of Bare Island, lie three islets, the largest and westernmost of which is Salt Island, which lies three-eighths of a mile from the western shore, and is conspicuous for the high, bare, bluff head at its eastern end. Stunted fir and spruce cling to its sides, and there is a **Salt Island.**

small group of them on the eastern end of the head. Next to the eastward is **Round Island**, rocky and of moderate height, and covered with a thick growth of spruce and fir. Its eastern end is a round, precipitous head, also thickly wooded.

Avery's Rock and Light-house.

Channel or Avery's Rock, the southernmost of the three islets, lies to the southwestward of Round Island, and is perfectly bare and rocky, about twenty feet high, marks the turning point in the channel, and is always steered for in coming up the bay. It is quite bold-to, and may be passed close-to on either hand, although the rule is to pass to the eastward of it. On the rock is built a square brick dwelling, painted white, from the centre of which rises a low, square tower, showing a fixed red light, of the fifth order, from a height of sixty-eight feet above the sea, visible fourteen miles. It is officially known as Avery's Rock Light-house, and its geographical position is

Latitude.....44° 39′ N.
Longitude.....67° 21′ W.

Fog-signal.

During thick weather a bell, struck by machinery, gives two blows in quick succession alternately with a single blow at intervals of thirty seconds.

Larrabee's Cove.

Salt Island and Round Island are exactly opposite to Sprague's Neck, (the latter being nearly a mile and a half distant from Round Island,) and they also lie on the southern side of the entrance to a large cove on the western shore, called Larrabee's Cove, with high, wooded shores, except on its northern bank, where they are mostly cleared and cultivated. It is two miles above Buck's Harbor, affords excellent anchorage in from two to three fathoms, and is commonly used by the coasters bound to and from Machias. A remarkable wooded point, called **Birch Point**, forms the northern point of entrance to this cove. It is nearly a mile to the northward of Salt Island, slopes gradually to the bay side, and is covered with a thick growth of spruce, birch and fir,—the admixture giving the foliage a peculiar rounding appearance.

Holmes' Bay.

Sprague's Neck, on the western shore, is the southeastern point of entrance to a large and wide bay which stretches away to the eastward for three miles and is called Holmes' Bay. At its mouth it is a mile and three-quarters wide, but it attains to its greatest width just to the northward of the entrance, where it is nearly three miles wide. From this point, however, it gradually diminishes in width until, at the settlement at its head, it is but a little over a quarter of a mile across. Its northwestern point of entrance is called **Holmes' Neck**, and is low, flat and cleared, quite green in summer, and faced by a fine beach. The trees stand somewhat back from the point, but there is a thick growth of them. From its extremity a long flat, bare at low water, makes out, and is known as **Holmes' Point Flats.**

Hog Island.

About half a mile to the northward of Sprague's Neck, in Holmes' Bay, lies Hog Island, low, and crowned with spruce and fir. Its southern end is flat, grassy and bare of trees; and long ledges, bare at half-tide and known as **Hog Island Ledges**, make out from its northern side almost over to the northern shore.

So obstructed is Holmes' Bay that no sailing directions can be given for it, and it is never used except by the small fishing boats which belong there. Its northern shore is tolerably well settled, and at the head of the bay there is quite a settlement occupying both shores.

Sanborn's Cove.

Holmes' Neck is a little over six miles above the northern Libbey Island and about a mile to the northward of Round Island. Birch Point, on the western shore, separates Larrabee's Cove from Sanborn's Cove, a large and deep cove running to the westward, and affording excellent anchorage for coasters in from two to three fathoms. Here begins Machias River;—the entrance lying between Birch Point and **Holmes' Point**, the western end of Holmes' Neck. The village of **Machiasport** is situated on its western bank, a little over a mile above Birch Point,—its suburbs extending to the northern shore of Sanborn's Cove. When Birch Point is passed the anchorage will open, but the village will be seen on the hill side ahead.

Machias River.

Machias River flows into the northwestern corner of Machias Bay, but is difficult to navigate, and unsafe for strangers without a pilot. Vessels do not go above Machiasport unless they have on board some one well acquainted with the river. The principal trade on this river is in lumber.

Sanborn's Point lies on the western shore, just above Birch Point. It has an earthwork upon it which is now dismantled, built at the southern end of Machiasport.

Randall's Point.

On the eastern bank, above Holmes' Point, the shore is high and bluff, having sandy, water-worn faces from twenty to forty feet high, with birch and fir clinging to their sides. The first point on this side above Holmes' is Randall's Point, partly cleared and backed by trees, and with one or two houses upon it. Its western end shows a sand cliff about ten feet high, with a few low scrub upon its edge, and there is a small beach along its base. About half a mile above it is **Hooper's Point**, high and sandy, with bluff faces, and its summit cleared and fenced. One or two small birch cling to its western slope, and a long, shingly point makes off from it about one hundred yards.

The anchorage at Machiasport is good, but the channel between the town and the mouth of the river is narrow and crooked,—running close to the western shore. All of the eastern shore is flat, and most of the flats are dry at low water, but it requires the assistance of a pilot to pass above Birch Point, unless the wind be fair and the tide well up.

From Sanborn's Point the river has a straight reach nearly **N.** and **S.** past Machiasport, and up to the **Eastern Branch**, which turns off towards East Machias. The distance is a mile and a half, and the river at this point turns abruptly to the westward towards the city of Machias. **Woodruff's Dike**, which is a shallow cove, bare at low water, lies a few hundred yards above Hooper's Point, opposite to the northern end of Machiasport, and its shore is thickly wooded. On its northern side is a high, steep, rocky bluff, also thickly wooded, called **Pot Head**, and here the shore turns away to the eastward into the **Eastern Branch**.

Opposite to Pot Head, on the western shore, there is a small, low, sandy island covered with grass and bushes, joined to the shore at low water, and called **Feather-bed Island.** Just above it is a bluff, rocky head of moderate height, crowned with fir, called Day's Head. The western shore, from Machiasport to Day's Head, is mostly cleared and settled, but not fertile. Beyond the head cleared lands of moderate height extend about half a mile to **Day's Point,** a low, grassy point, backed by a thick growth of scrubby trees. All of this shore is very flat,—the channel being nearest to the eastern shore. **Day's Head.**

On the eastern bank, off the northern side of Pot Head, extends a ledge about one hundred yards long. Here is **The Divide,**—the Eastern Branch making off in a **NE.** by **E.** direction towards East Machias, and the main river turning to the northwestward around Day's Point. The channel is about six hundred and fifty yards from the western shore,—the flats making off nearly to that distance. A small black spar-buoy is placed on the eastern point of *Day's Point Flats,* and after rounding this the course up river is about **NW.**

The entrance to **Eastern Branch** is between Rim Point, a low, rocky head, on the north, and Pot Head on the south. This branch of the river, after passing Pot Head, runs about **NE.** by **E.** for half a mile, and then, rounding Rim Point, turns abruptly to the westward, running about **W NW.**; when it turns to the northward and gradually to the northeastward, to **East Machias,** which occupies both banks of the stream about two miles above its mouth. At the village the Eastern Branch is a mere creek, both narrow and shallow, and impossible for strangers to navigate. The channel is so narrow and winding, and the turns so short, that no intelligible directions can be given. **Rim Point.**

The land on the northern shore of Machias River, from Rim Point to the westward, is of moderate height, partly cleared and cultivated and partly wooded; while on the southern shore it is low meadow-land, backed by woods, from Day's Point nearly to the bridge. Where the woods come down to the shore in a thick growth, with a scattered group of rocky boulders at the northern end, is **Crocker's Point,** a quarter of a mile below the bridge.

The bridge is a mile and three-quarters above Machiasport, and has a "draw" in it sufficiently wide for the largest vessels which use this passage. After passing it, the city of Machias will be in sight. Low flat lands, mostly grassy, fringe the water-side on both banks above the bridge, and are backed by higher lands generally bare of trees.

About a mile above the bridge, on the northern shore, is a high, grassy point, called Marshall's Point, with bare ledges cropping out near its southern end. It is mostly composed of grass land, but has a few scattered trees, and the remains of an old house are to be seen upon it. The land on both banks above it is low and partly wooded. **Marshall's Point.**

About a mile above the bridge, on the western shore, is **Libbey's Point,** sometimes called **Meserve's Point.** It is low and thickly wooded with spruce, birch and fir, and both shores are lined with dikes to prevent the flooding of the meadow-lands.

Just above Libbey's Point, but on the eastern shore, and about a mile above Marshall's Point, is **Hoyt's Head,** high and steep, fringed with trees, but mostly under cultivation. From its base a long dike makes out in a **W. ¼ N.** direction for about a mile, and is called **Fenno's Dike.**

On the western shore, a few hundred yards above Libbey's Point, is a thickly wooded, rocky head, called Meserve's Head. Here the low meadow-lands begin, and extend nearly a mile to the outskirts of the city. At this point the river branches,—the main stream turning to the southwestward towards Machias, half a mile above, and the north branch, called **Middle River,** running to the northwestward. The latter is now dry and its bed is a meadow. The low meadow-lands are backed by thick woods, composed of a variety of trees, and at high water are all covered; but the edges of the flat are staked out. **Meserve's Head.**

Middle River was formerly crossed by a bridge at its mouth, but this has been built into a solid dike, shutting off all influx. At the western end of this dike begins the city of **Machias,** which occupies both banks of the river. This is the head of navigation. The river is dammed at the upper end of the city, and the dam is occupied by several mills.

Opposite the city there is a large ledge, having six inches on it at low water, and called *Middle Rock,* which occupies the middle of the channel. As the passage is extremely narrow, the presence of this ledge renders it exceedingly difficult for loaded vessels to pass through, and they frequently strike upon it.

Machias is three miles and three-quarters above Machiasport and a little over five miles above Birch Point, and has a very large trade in lumber.

DANGERS

IN APPROACHING AND ENTERING MACHIAS BAY AND RIVER.

I. ***Coming from the Eastward, through the Main Channel.***—Vessels approaching this bay from Cape Sable or from St. Mary's Bay must beware of Machias Seal Island, which is about four hundred yards long, low and rocky, and about twenty feet high. Upon it are situated the Machias Seal Island Light-houses;—two white towers a hundred and sixty-five feet apart, and bearing **E SE.** and **W NW.** from each other. They show two fixed white lights from a height, respectively, of fifty-four and fifty-eight feet above sea level, visible fifteen miles; and their geographical position is ***Machias Seal Island and Light-houses.***

Latitude	44° 30′ 7″ N.
Longitude	67° 6′ 5″ W.

Vessels standing to the northward, with these lights to the westward and distant about five miles, must go about as soon as the two lights come in range, to avoid the *Murr Ledges.*

Fog-signal. A gun is fired every four hours during a fog, as a warning to vessels; but this is an entirely insufficient precaution. There should be either a powerful steam-whistle or an air-trumpet on this island, or the gun should be fired more frequently.

From Machias Seal Island Light-houses

	Miles.
Libbey Island Light-house bears NW. ¾ W.	12
The southeastern shoal of the Murr Ledges SE.	1¼
Southeast Ledge SE. ½ S.	5¾
St. Mary's Ledge E. ⅔ S.	10

Three and a half miles W. from Machias Seal Island Light-houses lies *a rock which has caused the wreck of several vessels.* It was seen by Captain Johnstone, of the ship "Liverpool," trading to St. John, in 1834, and it is proposed to name it *Liverpool Rock.* The pilots could not tell us anything of the depth of water upon it.

There are no dangers on the coast, after passing Seal Island, until Libbey Island is reached. Neither are there any between Southwest Head (Grand Manan) and the entrance, nor in coming along shore from the eastward. Therefore, the first obstruction to navigation which mariners must specially look out for is Cross Island Ledge, or *Southwest Ledge,* as it is sometimes called, which makes out in a westerly direction from the southwestern point of Cross Island for about a mile and a quarter, and for most of that distance is bare at half-tide. It is marked by an iron can-buoy of the second class, painted red and marked No. 2,—placed in seven fathoms to the southwestward of the ledge. After passing this ledge there are no dangers until up with Howard's Point. Here vessels must look out for Sea-Shore Ledge, which lies off the point at a distance of five hundred yards, and is out at low water. It is not in the way unless a vessel is beating to windward, but is marked by a black spar-buoy (No. 1) placed on its southeastern end in thirty feet water, as it is the southernmost of a long line of ledges, most of which are under water, extending along the western shore from Howard's Point almost to Buck's Harbor. Over some of these ledges a vessel of light draught might pass, but they would probably bring up a large or loaded vessel.

Cross Island Ledge.

Sea-Shore Ledge.

In 1872 the pilots informed us that there was *a sunken rock, with three fathoms on it,* but not named, about a mile E SE. from the southwestern point of Bar Island. It is nearly in the channel, but a little to the westward of the sailing lines, and is only dangerous to large and deeply laden vessels. *Another sunken rock* is said to exist on the eastern side of the channel, about a mile W NW. from Northern Harbor, (on Cross Island,) or nearly in line between that harbor, Three-Fathom Rock and Bar Island; but its existence is very doubtful. The pilots could not even tell us the depth of water upon it.

After passing Buck's Harbor the channel is clear to Avery's or Channel Rock, which is quite steep-to, and may be approached closely. The light-house will serve to distinguish this rock; and, when abreast of it, Round Island will be seen on the western side; and, lying off it, a black spar-buoy, (No. 3.) This is on Round Island Flats, which extend about N. by W. from the island to a distance of nearly three-quarters of a mile. When past it, and steering over towards Birch Point, there will be seen another black spar-buoy, (No. 5,) which bears about E SE. from Birch Point and marks *The Middle Ground.* Both buoys must be left to the westward. When past The Middle Ground buoy, keep the southwestern shore aboard to avoid the very *extensive flats which make off from the eastern shore,* as vessels very frequently run aground on these flats,—the channel being narrow and the edges of the shoals not marked.

Round Island Flats.

A red spar-buoy (No. 2) marks the end of what are known as *Birch Point Flats.* The course to avoid them leads directly towards the western shore and almost over to it, as the flats are very extensive. The point of flats on which this buoy is placed is nothing more than the western end of *Holmes' Point Flats,* and is incorrectly named, as there are no flats off Birch Point. This is the most difficult part of the channel,—being extremely narrow and crooked; but the flats are soft, and no harm will follow from getting ashore upon them. Birch Point buoy is about a mile NW. by N. from Birch Point, and the channel leads between it and the point. After passing it there are no dangers up to the anchorage at Machiasport; but if bound up to East Machias or to Machias, you should take a pilot.

There are only flats in the river, which are very extensive and are not marked,—the only exception being the buoy on Day's Point Flats, which extend off from Day's Point to the eastward a considerable distance, (about six hundred yards.) This buoy lies off the mouth of the Eastern Branch, and was placed in position by the pilots of the tow-boats to enable them to shape their course by the point of the shoal.

Day's Point Flats.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MACHIAS BAY AND RIVER.

I. ***Coming from the Eastward, through the Main Channel.***—If coming along shore from West Quoddy Head, steer **SW.** by **W.** ½ **W.** from the head until Libbey Island Light-house is made, when steer for it until within two and a half miles, with Stone Head bearing **NW.** ⅛ **W.** Now steer **NW.**, with the head a little to the westward of the course, which will avoid Cross Island Ledge, making off from the southwestern end of Cross Island for about a mile and a quarter. When Libbey Island Light-house is opened just to the westward of the northernmost of the two islands, it will bear **SW.** ¼ **W.**; Channel Rock will then bear **NE.** by **N.**, and the passage will be clear. Keeping Libbey Island Light-house bearing **S SW.**, a **N NE.** course leads right up to the rock, which pass to the eastward close-to, and steer **N.** ½ **E.** for Round Island. When abreast of the latter, steer **N.** by **W.** for the black spar-buoy on Round Island Flats, passing to the eastward of it, and when past it steer **NW.** by **N.** to clear the black buoy on The Middle Ground. When past this buoy, the course is **W NW.**, keeping the northern shore aboard to avoid the extensive flats making off from the southern shore, and passing to the eastward of the red buoy on Birch Point Flats. When abreast of this buoy, steer **N.** by **E.** ½ **E.** up the middle of the river, and anchor off the wharves. The shores are pretty bold, and at low water two and a half fathoms may be carried up to the anchorage at Machiasport.

Vessels bound to Machias anchor at the Port, and take a tug or a pilot. The course from Pot Head, to clear Day's Point Flats, is **N.** by **E.** ½ **E.** past the buoy, and then **NW.** for the "draw." After passing the draw the course is **W NW.** to Libbey's Point; thence about **NW.** to The Divide; and from The Divide to the landing at the city, **W SW.** From Machiasport to the bridge about two fathoms may be taken; but there is not over ten feet in the channel up to Machias at low water.

Middle Rock has been partly removed by the U. S. Engineers, so that it now has about six inches on it at mean low water.

From the vicinity of Southwest Head, (***Grand Manan,***) steer **W.** by **N.** ½ **N.** for Libbey Island Light-house, keeping the eastern island close aboard until past Cross Island Ledge, when steer **N.** by **E.** for Channel Rock, and follow the directions given above.

From the vicinity of Cape Sable, steer **N NW.** until Libbey Island Light-house is made, which should be seen directly ahead. Continue this course until within about a mile of the light, when haul up to enter the bay, keeping the eastern Libbey Island close aboard, and when past Cross Island Ledge haul up for Channel Rock Light-house, about **N.** by **E.**, and proceed as before directed.

On the above courses it is necessary to be very careful not to be set on to Cross Island Ledge, as the **N.** by **E.** course for Channel Rock leads very close to it.

WESTERN CHANNEL INTO MACHIAS BAY.

The Libbey Islands, as before stated, (page 42,) lie in the middle of the entrance to Machias Bay,—the Main Channel being on their eastern side, while west of them, between the light-house and the mainland, is what is called the Western Channel,—a wide and nearly clear passage, with good water. On its western side lie a number of islands; the principal of which are The Brothers, Scabby Islands, Ram Island, Foster's Island, Stone's Island and Starboard or Brown's Island. This channel is always used by vessels coming from the westward. In approaching it through Moos-a-bec Reach the first island met with, after passing Head Harbor Island, is **Pulpit Rock**, which lies to the eastward of Great Spruce Island, and in the mouth of Englishman's Bay. It is a low, bare islet, entirely destitute of vegetation. **The Brothers.** A little over half a mile to the eastward lie The Brothers, two rocky islets of moderate height, covered with grass, except on their northern side, where there is a scanty growth of fir. They lie **E.** and **W.** from each other, close together, with no passage between them. A mile and a quarter to the eastward of The Brothers are the Scabby Islands, two rocky islets lying **NE.** and **SW.** from each other, a mile **S.** by **W.** from Point of Main, about half a mile **SW.** from Foster's Island, and a little over a mile and a half **W NW.** from Libbey Island Light-house. The eastern islet is conspicuous for a high, round head, with one or two dead pines upon it, which at a distance look like masts; otherwise it is bare. The western islet is lower, and has a few dead fir trees on its eastern end. Between these islands and The Brothers lies the eastern entrance to Englishman's Bay. **Scabby Islands.**

Ram Island lies half a mile **S.** from Foster's Island, and about a third of a mile to the eastward of Scabby Islands, and is a low, rocky islet, with a scanty growth of stunted fir on its western end. From Libbey Island Light-house it is distant one mile, which is here the width of the western entrance to Machias Bay. **Ram Island.**

Foster's Island lies a little over three-eighths of a mile to the northward of Ram Island, and about the same distance from the shore of Point of Main. It lies N. and S., is nearly half a mile long, bare and rocky, formerly wooded, but now cleared and covered only with tree stumps. It is remarkable for the bleached, grey appearance of these stumps, which look like grave stones.

Foster's Island.

A red spar-buoy (No. 2) marks the northern end of the long ledge, called **Foster's Island Ledge**, which makes to the northward from this island.

Nearly half a mile to the northward of Foster's Island lies Starboard or Brown's Island, a rocky islet, almost entirely bare, and remarkable for a high, bare, precipitous face at its northeastern end, with a few spruce trees clinging here and there to its sides and summit. It lies about three-eighths of a mile from the western shore of the bay; and a group of houses and a wharf are seen upon its southwestern end. Strangers must not attempt to pass between this island and the mainland, as a long sand-spit makes off from Point of Main in an easterly direction, nearly joining the island, and forming a sort of cove on its western side, which in southerly and southeasterly winds affords a good anchorage.

Starboard or Brown's Island.

Passing Libbey Island Light-house, the course of the Western Channel leads to the northeastward, passing to the eastward of Ram and Foster's islands; and, to the northward, about a mile and a half from the light-house and a mile from the northern Libbey Island will be seen Stone's Island, a barren, rocky island of moderate height, covered with a thick growth of stunted fir except at its southern end, where is a remarkable, round, bluff head, with a white face, called **Stone's Head**. This head is the part of the island which will be seen by vessels coming in by the Western Channel. From Starboard Island it is distant over half a mile to the eastward; from Foster's Island, one mile in the same direction; and from Ram Island, a mile and a half to the northeastward.

Stone's Island.

Between Stone's Island and the northern Libbey Island the channel is about a mile wide.

There is also a good passage between Foster's Island on the north and Ram and Scabby Islands on the south; but it is obstructed by a long ledge, mostly bare at low water, which makes off from the southern end of Foster's Island half way over towards Ram Island, and is called *Foster's Island Point.*

DANGERS

IN APPROACHING AND ENTERING MACHIAS BAY AND RIVER.

II.—***Coming from the Westward, through the Western Channel.***—Off the southern end of Stone's Island, at a distance of two hundred and fifty yards, lies a large ledge, bare at one-quarter ebb, and with good water inside of it. It is called Stone's Island Ledge, and is marked by an iron spindle, painted black, surmounted by a cage, and placed *on top of the rock.* Vessels using the Western Channel must pass to the eastward of it; those using the passage between Foster's and Stone's islands pass to the southward of it.

Stone's Island Ledge.

Vessels using the passage between Starboard and Stone's islands must look out for Starboard Island Ledge, which lies off the island of that name, and has five feet upon it at low water. It is about one hundred yards long in a northerly and southerly direction, and is marked by a spar-buoy painted red and black in horizontal stripes, and placed in five fathoms about thirty yards to the southward of the shoal of the ledge. It is best to pass to the southeastward of the buoy, as the ledge is boldest-to on that side.

Starboard Island Ledge.

Off the northern end of Foster's Island a long ledge makes out to the northwestward for about an eighth of a mile, and is marked by a red spar-buoy, (No. 2,) placed in three fathoms. The shoal is called Foster's Island Ledge; and vessels using the passage between Foster's and Starboard islands must pass to the northward and westward of the buoy.

Foster's Island Ledge.

Sea-shore Ledge, before mentioned, (page 46,) lies off Howard's Point, at a distance of five hundred yards, and is out at low water. It is the southernmost of a long line of ledges, (most of which are under water,) extending along the western shore of the bay from Howard's Point almost up to Buck's Harbor. A black spar-buoy (No. 1) is placed in five fathoms off the southeastern end of the ledge,—the course passing to the eastward of it.

Sea-shore Ledge.

These are all the dangers in the Western Channel.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MACHIAS BAY AND RIVER.

II. ***Coming from the Westward, through the Western Channel.***—Coasters (the only vessels which enter by this channel) leave Head Harbor Light-house to the northward and steer **NE.** by **E.** for Libbey Island Light-house, passing to the westward of it; and when it bears **S SW.**, they steer **N NE.** for Channel Rock Light-house. Passing to the eastward of this rock the course is **N NE.** for Round Island, and when abreast of the latter **N.** by **W.** for the black spar-buoy on Round Island Flats. Passing to the eastward of this buoy the course is **NW.** by **N.** to clear the black buoy on The Middle Ground, and, when past this buoy, **W NW.**, keeping the western shore aboard to avoid the extensive

flats which make off from the eastern side. This course leads up to the red buoy on Birch Point Flats, which is to be left to the northward, and N. by E. ½ E. will lead up to the anchorage off Machiasport. On the above courses there will be deep water as far up as Avery's or Channel Rock, and two and a half fathoms up to Machiasport. *Sailing Directions--Machias Bay.*

Having come through Moos-a-bec Reach, pass to the southward of Pulpit Rock, The Brothers, and Scabby Islands. The course is nearly E. from Mark Island to Libbey Island Light-house, and the distance nearly seven miles. When up with the light-house, bring it to bear S SW. and steer N NE. for Channel Rock, following the directions given above.

On the above courses, to enter Buck's Harbor.—When abreast of Northern Harbor, on Cross Island, you can look right into Buck's Harbor, and there are no dangers in the way except *Buck's Head Ledges*, the outermost point of which is marked by a small, rocky islet, destitute of all vegetation. (See page 43.) Round this islet and steer up the middle of the passage for Buck's Neck, and anchor in from three to four fathoms in the Outer Harbor. *Or, wishing to enter the Inner Harbor*, as soon as you are past Bar Island haul over to the northward, and anchor in the basin formed between that island and the neck. Here is good anchorage, safe from all winds, and a depth of from six to ten feet at low water.

Bear in mind that the northern side of Buck's Head is very bold, and may be approached very closely. The ledges, and the small bare rock outside of them, are also bold on the northern side.

Coming in by the Western Channel, and intending to enter Buck's Harbor, keep at least half a mile off the western shore of the bay, between Howard's Point and the entrance to this harbor, to avoid the ledges which line this part of the shore. Of these Sea-shore Ledge is the southernmost, and, as before mentioned, is marked by a black spar-buoy.

CROSS ISLAND NARROWS.

As before mentioned, (page 42,) between Cross Island and the mainland on the eastern side of Machias Bay there is a passage, about half a mile wide, called Cross Island Narrows. It is not fit for the use of strangers, but is often resorted to by fishermen and coasters, who are well acquainted with its dangers and who wish to enter the bay without rounding Cross Island. The entrance to it from the eastward is between Cape Wash on the north and the dry ledge, called The Old Man, on the south. There is another passage, which is wider, between The Old Man and Double-headed Island; but the former is the one commonly used.

There are several bad ledges in this channel; and nearly in the middle of it, off the northeastern shore of Cross Island, lies a rocky islet, called **Mink Island**,—the channel leading to the northward of it. Between it and Cross Island lies what is called **Eastern Harbor** or **Seal Cove**, which is a good shelter for light-draught vessels in southerly winds, but is open to the northwestward.

DANGERS.

On the northeastern side of the passage, and a little to the eastward of Mink Island, is Thornton's Point Ledge, bare at half-tide, and marked by a red spindle with cage on top. The channel passes to the southwestward of it. *Thornton's Point Ledge.*

Off the mouth of Seal Cove, and a little to the northwestward of Mink Island, is Seal Cove Ledge, a dangerous rock with six feet at mean low water. It is marked by a black spar-buoy (No. 1) placed in four fathoms just to the northeastward of the rock; and the sailing-line passes to the northward of it. The ledge is about one hundred yards long in a NW. and SE. direction. *Seal Cove Ledge.*

SAILING DIRECTIONS.

To enter Cross Island Narrows, pass about midway between The Old Man and Cape Wash, and steer up for Mink Island until past Thornton's Point Ledge, on the northern side of the channel; then haul up to the northward nearly for the northern end of Chance's Island until through the Narrows and Quaker Head bears to the eastward of S., when steer over towards Bare Island,—being careful to give Chance's Island a good berth to avoid the long ledges which make off from it to the southward. As soon as Channel Rock bears N. steer for it, and follow the directions previously given. Four fathoms at low water can be carried through the Narrows.

There are several other passages into and out of this bay,—as, for instance, one between Starboard and Stone's islands, and one between Ram and Scabby islands and the Point of Main; but none of these are fit for strangers.

LIGHT-HOUSES.

NAME.	Latitude N.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Machias Seal Island Light-houses	44 30 7	67 6 5	4 28 24.3	2 fixed.	54 & 58	15
Libbey Island Light-house.....	44 34 5	67 22 2	4 29 28.1	Fixed.	52	12
Avery's or Channel Rock Light-house...	44 39 0	67 21 0	.....	Fixed red.	68	14

VARIATION OF THE COMPASS.

The approximate variation of the magnetic needle is, for 1879, 17° 16′ W., and the annual increase about 2′.

LIFE-SAVING STATION.

The United States Government have established on Cross Island a life-saving station, with all the apparatus and other appliances necessary for assisting the shipwrecked.

ICE IN MACHIAS AND LITTLE MACHIAS BAYS.

Little Machias Bay is usually closed to navigation during the winter; and in severe winters, like that of 1874–5, it remains closed from December to April. Winds and tides have no decided influence either in preventing or assisting formations.

In Machias Bay, likewise, the ice formation is purely local, except during severe winters. Beginning at the head of the bay and in the sheltered places along the shores, it gradually extends downward and outward, and forms a serious and often insurmountable obstruction to navigation. During calms and light winds from the northward and westward the local formations rapidly increase, while strong winds break them up and force them, as "drift-ice," on the shores and into the harbors on the lee side of the bay,—thus forming a more serious hindrance to the navigation of those harbors than the purely local formations. The tidal current being comparatively weak, has little or no effect in preventing formations of ice or in opposing the effects of strong winds in moving the ice.

During severe winters, like that of 1874–5, the ice begins to form a serious obstruction to the movements of sailing-vessels about the middle of January; but steamers are usually able to proceed without much difficulty until the latter part of that month, when the bay is usually frozen entirely over,—the ice being composed of "field" and "drift" massed together in such quantities as to completely prevent navigation of any kind. To this mass, in 1875, was added great fields of drift-ice from outside, which filled up the mouth of the bay and the approaches to it,—extending out several miles from the coast-line;—and this soon freezing into a solid mass, effectually closed the bay from the 9th to the 19th of February. The weather moderating about the last-mentioned date, accompanied by winds varying from **SW.** around by the southward and eastward to **NE.**, with snow and rain, caused a general breaking up of the mass; but it did not finally disappear until the latter part of March. To be sure, a great portion of this large formation went to sea during the first week in March; but subsequent formations, each lasting but a few days, caused considerable hindrances to navigation as late as the twenty-fifth of that month; and most of the harbors in the bay remained closed several weeks after the bay was free from all obstructions.

The few buoys in the bay being spars were not drifted from their places, as the ice passed over them instead of massing against them, as in the case of can or nun-buoys.

LITTLE KENNEBEC RIVER.

The entrance to this comfortable little harbor of refuge lies between Point of Main on the east and Cow Point on the west. From its mouth to its head the distance is nearly six miles, but the anchorage is only about a mile and three-quarters above the Point of Main. It is rarely used, owing to the insufficient knowledge possessed of its approaches by strangers; but the islands which lie off its mouth are bold-to, and with good directions there is no difficulty whatever in entering it and proceeding up to Sea-Wall Point. The course from the eastward leads between the **Scabby Islands** and **The Brothers**;—the former appearing as two low, barren, rocky islets having only a few dead trees upon them, and the latter as two rocky islets of moderate height, with a grassy surface and a scanty growth of fir clinging to their northern sides. The eastern Scabby Island is remarkable for a high, round head, on the summit of which a few dead pines appear like masts. The other islet is lower, and has a few dead fir trees on its eastern end. The channel between these islands and The Brothers is a mile and a quarter wide.

Point of Main. Point of Main is the southern extremity of the mainland separating Machias Bay from Little Kennebec River. It is high, bare and rocky, and is backed by the usual growth of spruce and fir.

Coming through the Inshore Passage from the eastward, vessels must pass between Ram Island and Foster's Island, leaving Scabby Islands to the southward, and steer up by the Point of Main, with Ram Island nearly astern; which course will lead to the eastward of a small, low, rocky island covered with grass, named **Shag Ledge**, lying nearly three-quarters of a mile to the northwestward of Point of Main and about half a mile from it. The Main Entrance, however, is between The Brothers and Scabby Islands, and is unobstructed up to Shag Ledge, which must receive a good berth at high water,—for at low water the ledges which make out from it are bare and quite bold-to.



Entrance to Little Kennebec River, Libbey Id. Lt. Ho. bearing E. ¼ N. distant 2¼ Miles.



Entrance to Englishman's Bay from the Westward, Mark Id. bearing N. W. by W. ½ W. distant 3 Miles.

Hickey's Island.

In the middle of the mouth of Little Kennebec River lies a small, low island, partly sandy and partly rocky, and dotted here and there with spruce and fir and a stunted growth of pine. It lies nearly **N.** by **E.** and **S.** by **W.**, and is called Hickey's Island. A long reef, dry at low water, makes off from its southern end to a distance of two hundred yards. The best water is midway between this island and the mainland to the eastward.

Half a mile to the northward of Hickey's Island lies **Fan Island**, close to the western shore. It appears as a grey, rocky head, crowned with fir, and bare ledges make off from it to the westward.

Cow Point.

The high, wooded lands in the township of **Jonesboro'** stretch away to the westward, from behind Fan Island, towards Englishman's Bay, and end in Cow Point, a mile and a quarter to the westward of Fan Island. This is a thickly wooded point, of moderate height, and is tolerably bold-to.

The shores on the eastern side of the entrance are high, rocky and bare, with the exception of a few stunted spruce here and there. Just above Hickey's Island this bank runs into a low point called **Pierce's Point**, the westernmost point of the eastern shore, and about a mile above Point of Main. It is low, rocky, and fringed with fir trees, and between it and Fan Island the channel is only a quarter of a mile wide.

Sea-Wall Point.

Sea-Wall Point is so remarkable in its appearance as to serve as a distinguishing mark for the entrance to this river. From off the entrance it looks like a line of yellow rocks, backed by low woods, and is entirely different in appearance from any other part of these shores. On coming close up with it, it will be seen that what appeared at first to be yellow rocks is a wall or rampart of pebbles and boulders. Hence the name. This point is on the western bank, about a mile and three-quarters above Point of Main, and forms the southern side of **Bare Cove**, the common anchorage for vessels entering this harbor. It presents, when viewed from seaward, a very curious appearance. At the head of Bare Cove there is a large lobster-packing house and outbuildings. The land is gently sloping, grassy, and crowned with a thick growth of birch and other trees.

Hope Island.

Hope Island lies on the northern side of the cove, and is a round, bluff-looking island, of moderate height, covered with a thick growth of spruce, fir and birch. In-shore of it lies **Spar Island**, a very small islet, which shows a high hillock in its centre covered with scrubby trees, like a crown.

On the eastern shore, nearly opposite to Sea-Wall Point, is **Grey's Beach**, low land, covered with scrub, and faced by a fine beach extending up to Yo-ho Point, (about a mile above Sea-Wall Point.) The land on this shore is mostly wooded.

Marstin's Mountain is a very remarkable hill, situated on the western shore, about a mile above Hope Island. It is distinguished by a peculiar bare spot, of a yellow color, on its summit, and is crowned with stunted spruce and fir on its western end. The rest of the summit is bare. This is a very remarkable looking mountain and cannot be mistaken, as the surrounding lands are well wooded and present a striking contrast to its yellow summit, crowned with black fir.

Yo-ho Point.

Yo-ho Point, on the eastern shore, is the northern end of Grey's Beach, and is a mile and a half above Pierce's Point and two miles and a half from Point of Main. The channel leads between this point and Hope Island, there being no passage between the latter and the western shore. Yo-ho Point is of moderate height, rocky, and covered with a thick growth of scrub.

A ledge, bare at half-tide, lies two hundred yards off this point, and there is no passage inside of it. The bottom is soft. It is noticeable that the rocks at the pitch of the point are of a peculiar pinkish appearance.

Behind Yo-ho Point a long and narrow cove makes into the southward, called **Yo-ho Cove**. There are several ledges in it; but, for vessels of light draught whose masters are acquainted with the dangers, it affords good anchorage.

Between Yo-ho Point on the south and Johnson's Point on the north, is the entrance to the Eastern Branch; for, at Johnson's Point, the river divides,—the main stream continuing to the northward, while the Eastern Branch takes a course to the northeastward.

Johnson's Point.

Johnson's Point, which separates the two branches, is smooth and grassy, of moderate height, fringed with spruce, fir and a few birch, and has a solitary house on its slope. To the eastward of the point is a high, wooded hill, called **Johnson's Mountain**. Off the end of Johnson's Point, with which it is connected at low water, is a low, thickly wooded islet, called **Porcupine Island.**

Marstin's Point.

The western shores of the river above Sea-Wall Point are high, rocky, and very thickly wooded with a scrubby growth of trees and bushes, from abreast of Hope Island to Marstin's Point. This point is just opposite to Johnson's Point, and on the western bank of the main river. It is a high, bluff, rocky head, whose summit and sides are cleared; but there is a thick growth of scrubby trees at its base. Its southern extremity is low and thickly wooded with a growth of stunted trees and bushes. Behind it rises Marstin's Mountain, already alluded to.

On the eastern shore of the main river, above Johnson's Point, the land is thickly wooded with a small growth of various kinds of trees. Nearly a mile above that point is a very peculiar looking clay cliff, called **Goose Cove Point**. It has a growth of scrub clinging to its sides, extends to the northeastward about four hundred yards, terminating in a round, bluff boulder; and its surface is diversified with grass land and trees. Off the northern extremity, at a distance of about one hundred and fifty yards, lies a detached rock, bare at low water, called *Goose Rock*, between which and the point there is a passage for vessels of light draught. **Goose Cove** makes in on the northern side of the point, and is shallow and of no importance. The river here sends off a second branch to the eastward, almost entirely bare at low water, and unfrequented; while the main body of the stream continues to the northward to its head.

On the western shore, about half a mile above Marstin's Point, the cleared and cultivated lands begin. They are of moderate height, dotted here and there with trees, and present water-worn faces to the eastward. About a mile above Marstin's Point the land shoots out into a long, low, rocky point, called Foss' Point. Here the western shore turns more to the westward, while opposite to it the long cove above described makes in to the eastward, thus forming a second divide. The shores of the main river are gently sloping, partly wooded and partly cleared and cultivated, with sand cliffs cropping out here and there; but the stream is very shallow. At the point of division stands **Holway's Point**, a remarkable looking clay cliff of moderate height, covered with a growth of scrub. A long sand-bar, bare at half-tide, with scattered boulders upon it, extends from this point in a **SW.** direction for one hundred and fifty yards.

Foss' Point.

The most prominent feature in the eastern cove is Spruce Cove Point, a long, high, clay cliff, extending in an **E.** and **W.** direction, its surface being covered with scrub and bushes, some of which cling to the perpendicular face of the cliff. It separates Goose Cove from **Spruce Cove**, which lies on its northern side. From this point a long ledge makes out about one hundred and fifty yards, barely covered at high water, and usually known as *Spruce Cove Ledge*.

Spruce Cove Point.

The shores at the head of the eastern cove are tolerably well cultivated, smooth and cleared, and a small settlement occupies the shore on both sides. The cove is of slight importance, as it is almost entirely bare at low water.

On the western shore of the river, opposite to Holway's Point, is **Smith's Point**, about half a mile above Foss' Point, and showing a clay head, with precipitous faces; and behind it will be seen smooth, cleared and well cultivated land. A long sand-bar makes off from the point towards Holway's Point.

Strangers should not attempt to go farther up the river than Marstin's Point.

Eastern Branch of Little Kennebec River.

The Eastern Branch, or **Eastern Kennebec River**, makes in between Yo-ho Point and Johnson's Point, (see page 51)—its course from Porcupine Island being **N NE.** for about half a mile, after which it turns to the eastward. Ten feet at low water may be carried to its head, but it is now rarely used, as there is only a small trade in wood. Both shores are thickly wooded with spruce, fir and birch.

Half a mile above Johnson's Point, where the branch turns to the eastward, lies a small, thickly wooded islet of moderate height, called **Hog Island**, dividing the passage into two channels. On the eastern shore, abreast of it, is a long cove, called **Miller's Creek.**

The western channel runs nearly **N.**, leaving Hog Island to the eastward, and the high, bare hill, called **Mayhew's Mountain**, to the westward; and, rounding the island, turns about **NE.** by **E.**, joining the eastern channel at the eastern end of Hog Island.

The eastern channel is very narrow and dry at low water. Leaving Hog Island to the westward, it skirts the base of a high, bare, bluff hill on the eastern shore, called **Collins' Mountain**; and, uniting with the western channel, both proceed in a northeasterly direction for about half a mile, between steep and barren banks, to a rocky point on the eastern shore covered with bushes, and known as Larrabee's Point. Here an abrupt turn to the southward leads through a very narrow but deep channel, about seventy-five yards wide, to a dam, which crosses the passage and separates it from a large and wide cove, called **Larrabee's Basin.** This dam was the site of mill-works, now deserted, and the basin is nearly all occupied by meadow.

Larrabee's Point.

Beyond the entrance to Larrabee's Basin the shores continue of about the same character, for about a third of a mile, to the head of the branch. Twelve feet at low water may be carried up as far as Hog Island, and ten feet up to Larrabee's Point.

That portion of Little Kennebec River which is contained between Marstin's and Johnson's points on the north, and Hope Island on the south, is sometimes known as **Kennebec Bay.**

DANGERS

IN APPROACHING AND ENTERING LITTLE KENNEBEC RIVER.

From the Eastward, through the Ram Island Passage.—This entrance, which is only used by coasters who have come along shore and who are well acquainted with the vicinity, is, nevertheless, a good and safe channel for vessels of light draught. The entrance to it is between Foster's Island on the north and Ram Island on the south. After passing between these islands the course leads to the northwestward, towards Hickey's Island, and the first danger met with is Shag Ledge, a low, rocky island, seen nearly ahead when passing between Ram and Foster's islands. Long reefs of rocks, bare at low water, extend on both sides of it; and it must, therefore, when these are covered, receive a good berth. At low water it is safe to go close to the end of the reef with not less than three fathoms water.

Shag Ledge.

Half-Tide Ledge.

After passing Shag Ledge you will approach Half-Tide Ledge, lying about a quarter of a mile off the western shore of Point of Main. It is out at three-quarters ebb, and must be left to the eastward. After passing it there are no dangers in the channel; but from the southern end of Hickey's Island there makes off a long reef, called *Hickey's Island Ledge*, dry at low water for about two hundred yards. It is not in the way unless you are beating to windward.

The best water in this part of the channel is midway between Hickey's Island and the mainland, where there is not less than three fathoms.

After passing Hickey's Island there are no dangers until up with Sea-Wall Point, which must receive a berth to avoid *the long bar making off from it to the westward.* After passing the point steer directly in to the anchorage, as there is nothing in the way.

If bound up the river, beware of Harvey's Ledge, lying on the western side of the channel, a little above Bare Cove. It is about one hundred and twenty-five yards from the western bank and is out at low water; and, in order to avoid it, you must not go to the westward of Spar Island bearing **N NW.** ***Harvey's Ledge.***

On the eastern shore, opposite to Bare Cove, and three hundred yards off Grey's Beach, lies a rock, out at half-tide, called *Dogfish Rock.* It is bold-to, and shows itself at almost all times of tide. From the lobster-packing house in Bare Cove it bears **E.** by **N.** After passing this rock the eastern shore is free from dangers until up with Yo-ho Point, the southern point of entrance to the Eastern Branch. Here look out for Yo-ho Ledge, a large ledge, bare at half-tide, lying two hundred yards to the northwestward of the point. There is a passage for small boats between it and Yo-ho Point, with soft bottom; but vessels should not attempt to use this narrow channel, even at high water. The main channel into the Eastern Branch passes to the eastward of Yo-ho Ledge, and, rounding it to the northward, passes between it and Porcupine Island. ***Yo-ho Ledge.***

Above Johnson's Point it is difficult to give an intelligible description of the dangers. They are, however, very few,—the principal difficulty in the navigation arising from the contracted channel. Nearly all of the points on both sides are bold-to until up with Goose Cove Point, off the northern point of which, at a distance of a hundred and fifty yards, lies a detached rock, bare at low water, called *Goose Rock.* It is bold-to, and there is a passage for light-draught vessels between it and the point.

Holway's Point is also shoal,—*a long sand bar, with scattered boulders on it,* making off from the point in a southwesterly direction, and bare at half-tide for about one hundred and fifty yards.

One-third of the way from Holway's Point to Goose Cove Point there is a detached rock, out at low water, called *Lobster Rock.* From Smith's Point also, *a long bar makes out,* obstructing the passage above Holway's Point.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING LITTLE KENNEBEC RIVER.

I. ***Coming from the Eastward, through the Ram Island Passage.***—Pass on either side of the Libbey Islands; but, if coming close along shore, pass them to the northward;—only observing to keep close to the northern island in order to avoid Cross Island Ledge. In so doing, nothing more than three fathoms can be carried. After passing these islands the course is to the westward, between Foster's Island on the north and Ram Island on the south. Continue to the westward until Libbey Island Light-house bears **SE.**, when steer **N.** by **W.** up the middle of the passage, having Ram Island nearly astern. This course passes to the eastward of Shag Ledge and to the westward of Half-Tide Ledge. Continue it until up with Hickey's Island, which pass to the eastward, keeping in mid-channel, where there will not be less than three fathoms. When the southern end of this island is on with the western end of The Brothers, and Cow Point bears **W. ½ N.** and the eastern end of The Brothers **SW.** by **S. ½ S.**, steer **N. ½ E.**, keeping in mid-river. You may go close to Fan Island; but, on approaching Sea-Wall Point, give it a berth of five hundred yards, steering about **N.** by **E.**, and, when abreast of it, steer **N.** by **W.** for Hope Island until abreast of the lobster-packing house, when haul up **NW.** by **W. ½ W.**, and anchor well inshore, according to draught, in from two to three fathoms water.

There is comfortable anchorage in this cove in three fathoms at low water, sticky bottom.

Above Bare Cove strangers should not attempt to go without a pilot.

II. ***By the Main Channel, between Scabby Islands and The Brothers.***—There are no dangers in this channel until up with Shag Ledge; and those described above are common to all the entrances of the Little Kennebec.

When Libbey Island Light-house bears **E.**, distant two miles and a half, steer **N.** by **E. ½ E.** for Pierce's Point, keeping midway between the islands. Pass Shag Ledge to the westward, giving it a berth to avoid the rocks mentioned above, and continue this course until past Hickey's Island and its southern end is on with the western end of The Brothers. Cow Point will now bear **W. ½ N.**, and you must steer **N. ½ E.**, following the directions given above.

Sailing Directions---Little Kennebec River. There are several passages among the islands leading into this river from the westward, but it is not advisable for strangers to attempt them. In case of necessity, Lakeman's Harbor can be made with greater safety and equal facility. Coming from the westward, outside of Head Harbor Island, Head Harbor may be made with perfect safety.

Of the above-mentioned passages among the islands, there is one (the first to the westward of the main entrance) which leads between Pulpit Rock and The Brothers on the south, and Great Spruce, Shot, Anguilar and Halifax islands on the north, towards Point of Main; and another which leads from Englishman's Bay, between Cow Point and Roque's Island. This latter will be described in its proper place, but the former is not safe for strangers.

It may also be remarked that there is a good and nearly unobstructed passage from Englishman's Bay into Little Kennebec River, between Fan Island and Hickey's Island,—the only danger being a ledge which makes off from Hickey's Island, known as *Hickey's Island Point.* This channel is commonly used by fishermen and the lobster-smacks.

LIGHT-HOUSE.

NAME.	Latitude N.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Libbey Island Light-house	**44 34 5**	**67 22 2**	**4 29 28.1**	Fixed.	**52**	**12**

No survey has ever been made of this river, and no tidal or current data can be furnished. The strength of the current, however, interferes but little with the courses in and out, except in the Ram Island Passage before hauling up for Hickey's Island. In the river the current sets generally in the direction of the channel.

VARIATION OF THE COMPASS.

The approximate magnetic variation for 1879 is about the same as at Machiasport, viz: **17° 16′ W.** The approximate annual increase is about **2′**.

ENGLISHMAN'S BAY.

From Fan Island the coast has a general course about **W.** for a mile and a quarter to Cow Point, already described. There are several indentations in the shore-line between these two points. About half a mile to the westward of Fan Island, and close in with the main shore, lies a small, rocky island, called **Calf Island**, situated in the mouth and on the western side of a large cove called Great Cove. The western point of this cove, called **Calf Point**, is rocky and of moderate height, crowned with spruce and fir, and extends off into a low, rocky point, which is, however, tolerably bold. Great Cove is an excellent anchorage,—the approaches being clear, except for *one ledge, which is always bare.* No directions are necessary for entering except to keep the middle of the passage, and, if the wind be to the southward, round Calf Island and anchor between it and the main. It will be a heavy blow that will disturb this anchorage.

Great Cove.

Mac's Cove, on the western side of Calf Point, between it and Cow Point, is a small cove with woody shores, of no importance, except in northerly winds, as there is no shelter from seaward.

The entrance to Englishman's Bay is between Cow Point on the east and Kelly's Point (which is also the northern point of the eastern entrance to Moos-a-bec Reach) on the west. Between these points it is seven miles wide, but the passage is contracted by a great number of islands lying in the entrance, through and among which lead the different channels into the bay. There is excellent anchorage for the largest vessels;—five and six fathoms being found as far up as Great Head. From a line joining Kelly's and Cow points the bay is five miles long to the entrance to Chandler's River at its northern end.

Point of Main has been already described. Kelly's Point, the western point of entrance, is flat and grassy, of moderate height, and backed by a bald, bare, rocky head, which, on its western side, juts out into the water. It forms the northern point of entrance to Moos-a-bec Reach;—the southern point being formed by the northern end of **Head Harbor Island**, a large island lying on the western side of the approaches to Englishman's Bay and about a mile to the southward of Kelly's Point.

Kelly's Point.

Two lights mark the eastern and western limits of the entrance to this bay. That on the eastern side is on Libbey Island, the westernmost of the two islets of that name lying off the entrance to Machias Bay. It is rocky and bare, with the exception of a few dead trees near its northern end. The light-house is built on its western end, and is a granite tower, thirty-five feet high, about two hundred and fifty feet distant from the keeper's dwelling, which latter is painted brown. A fixed white light, of the fourth order of Fresnel, is shown from a height of fifty-two feet above sea level, visible twelve miles; and a **fog-bell**, struck by machinery, six strokes in every minute, is attached to the light-station.

Libbey Island and Light-house.

The geographical position of Libbey Island Light-house is

Latitude.....44° 34′ 5″ N.
Longitude.....67° 22′ 2″ W.

The light-house which guides to the western entrance to Englishman's Bay, usually known as Head Harbor Light-house, and sometimes as **Moos-a-bec Light-house**, is on **Mistake Island**, which forms the southern side of Head Harbor. Mistake Island is of moderate height, with a stunted growth of trees near its western end, but is otherwise bare. The light-house is of brick, white-washed, and about two hundred and twenty-five feet distant from the keeper's dwelling, which latter is painted brown; and a covered way, whitewashed, extends about two-thirds of the way from the tower towards the dwelling. The tower is forty feet high, and shows a white light, of the second order of Fresnel, revolving once in every half minute, from a height of sixty-five feet above the sea. **Head Harbor Light-house.**

Its geographical position is

Latitude.....44° 28′ 27″ N.
Longitude.....67° 31′ 55″ W.

Vessels from the westward make this light and enter Englishman's Bay by the western channel, between Roque's Island and the mainland of Jonesport. Those from the eastward make Libbey Island Light-house and enter the bay by the eastern channel, between Scabby Islands and The Brothers. Both passages are good,—the former having not less than eight fathoms, the latter about six.

Two miles **S.** by **E.** from Head Harbor Light-house is placed a whistling-buoy, operated by the motion of the sea, and giving continuous blasts, averaging from twenty to thirty in a minute. It is shaped like a nun-buoy and is about twelve feet out of water.

In making this bay from the eastward the first noticeable object met with will be Libbey Island, with a grey stone light-house on its western end. The keeper's dwelling, close to it, is painted brown. There are a few dead trees on the northeastern end of the island. One mile to the northwestward of the light is **Ram Island**, already described (page 47.) as a low, rocky islet, with a scanty growth of small fir trees on its western end. A quarter of a mile to the westward of Ram Island, and on the eastern side of the entrance to the bay, lie the Scabby Islands, two small islands **NE.** and **SW.** from each other, and close together. The eastern one is conspicuous for a high, round head, with one or two dead pines looking like masts on its top; otherwise, it is bare. The western islet is lower than the other, rocky and bare, except for a few dead fir trees on its western end. (See also page 47.) **Scabby Islands.**

A mile and a quarter to the westward of the Scabby Islands lie The Brothers, two rocky islets of moderate height, lying **E.** and **W.** from each other, with grassy surface and a scanty growth of fir clinging to their northern sides. The eastern channel into Englishman's Bay passes between these islands and the Scabby Islands; and in coming in by it the entrance to Little Kennebec River will appear between the two groups, and, stretching to the westward from that entrance, the rocky, wooded shore between Sea-Wall and Cow points. The latter will appear rocky, of moderate height, and covered thickly with trees. **The Brothers.**

Behind The Brothers and to the westward of them will be seen the high, wooded shores of Roque's and Great Spruce islands, with the heavily timbered shores of Mark Island, and the rocky, wooded land on the northern and eastern faces of Head Harbor Island appearing to the southward of Great Spruce.

On the eastern side of the entrance, half a mile to the northward of the Scabby Islands, and the same distance to the southwestward of Point of Main, lies a small, rocky island covered with grass, called **Shag Ledge**. At low water long reefs of bare rocks extend off from it on both sides.

Pulpit Rock, a low, bare, rocky islet, lies about five-eighths of a mile **W.** from The Brothers; and one mile to the northward of the latter, and on the western side of the channel, lies a group, composed of three small islands, nearly **E.** and **W.** from each other,—the easternmost being one mile and five-eighths to the eastward of Great Spruce Island, and called Halifax Island. It is long and low, except at its western end, where it is joined by a sand-bar to a high, rocky head, which has a few dead spruce and pine dotting its surface. The eastern half is covered with a thin growth of scrubby fir. Next to the westward of Halifax is **Anguilar Island**, smaller than the former, and covered with a thin growth of scrubby trees. The westernmost islet of the group is in reality two islands, called the **Shot Islands**, very small and nearly bare,—there being but a few scattered trees on them. They lie **NE.** and **SW.** from each other, close together. **Halifax Island.**

The wooded shores of Mason's Bay will appear in the distance, between Cow Point and the northeastern end of Roque's Island. A little less than half a mile to the westward of the Shot Islands, and a little over a mile to the northward of Pulpit Rock, is the eastern end of Great Spruce Island. This and its companion, Little Spruce Island, are the southernmost of the group lying in the middle of Englishman's Bay, and which, with the smaller islands near them, separate the approach into two channels. The northernmost and largest of the group is Roque's Island, and between it and the Spruce Islands are contained excellent harbors. Great Spruce Island is high and rocky, about three-quarters of a mile in diameter, and its shores are partly wooded and partly bare. Its southeastern point is high, rocky and partly wooded, with high land rising behind it, while its eastern point (that which is nearest to the Shot Islands) is low and has a few spruce and pine trees upon it. This island is separated from Little Spruce, to the westward of it, by a narrow and crooked passage, called **Spruce Island Gut**, through which there is a channel for vessels of light draught. Little Spruce Island is of considerable height, with two high round heads on it, whose summits are covered with a scanty growth of scrubby fir. Its sides are bare and bluff, and bold-to, except at the southern end, where a very long and dangerous ledge makes off, called *Little Spruce Island Ledge*, which is bare at low tide, and breaks heavily at all times. **Great and Little Spruce Islands.**

Roque's Island, the largest island in Englishman's Bay, lies nearly in the middle, about a mile and a half from each shore. It is a mile and a half wide (from E. to W.) at its widest part, but its shape is so irregular that its length from N. to S. varies from a quarter of a mile to a mile and three-quarters. The shore-line is very much cut up by coves and indentations, some of which form excellent harbors of refuge, and as such are commonly used. From the Spruce Islands (to the southward of it) it is separated by a crooked passage from an eighth to a quarter of a mile in width, called **Roque's Island Narrows**, and sometimes **Spruce Island Narrows**;—the former being the preferable name. It leads from the westward into Lakeman's Harbor, or Roque's Island Harbor, as it is sometimes called.

Roque's Island.

The eastern shores of Roque's Island are high, barren and woody, except near the southern end, where a large portion has been burnt over and is now bare and desolate. The northeastern point is a high, wooded hill, terminating in a bare, rocky bluff of considerable height, called Great Head,—a prominent landmark for vessels entering the bay from the eastward. The northwestern point is called **Squiers' Point**, and is low, flat and grassy, backed by thin woods, mostly birch and spruce. A long ledge, bare at low water, makes off from it about a quarter of a mile, and is called *Squiers' Point Ledge*.

Great Head.

Between Squiers' Point and Great Head is formed a large and deep cove of regular shape, called Shorey's Cove,—a most excellent harbor, sheltered from all winds, with good anchorage in from two to three fathoms, soft bottom, and no obstructions. Its eastern shore is high and thickly wooded, while the southern and western shores are partly cleared and under cultivation, and on the latter there is a group of farm-houses.

Shorey's Cove.

The only danger in Shorey's Cove is the long reef which makes out from Squiers' Point, (before mentioned,) to avoid which, at high water, you should give the point a berth of five hundred yards. At low water, you may go within one hundred and fifty yards of the end of the bare reef.

Wood, water and fresh provisions can be readily obtained in this harbor at reasonable prices.

The southwestern point of Roque's Island, known as **Parker's Head**, is a high, rocky head, wooded with spruce and scrubby fir, and the land between this and Squiers' Point is high, rocky and wooded.

On the southern side of the island, directly opposite to Shorey's Cove, makes in another large cove, with good water, and well sheltered from all winds, called **Lakeman's** or **Roque's Island Harbor.** It may be entered from the westward through Roque's Island Narrows, and from the eastward by the passage between Halifax, Anguilar and Shot islands on the south, and Lakeman's Island on the north. This latter is rocky, of moderate height, and wooded, and lies to the southward of the eastern point of Roque's Island and close to it. There is also a passage into Lakeman's Harbor between Great Spruce and the Shot islands,—and this latter is the best entrance, as it is not safe to pass between Lakeman's and the eastern point of Roque's Island.

Lakeman's Island.

About two hundred yards above Parker's Head a large bar, called *Parker's Bar*, runs out for about a quarter of a mile from shore in a **W SW.** direction.

About a mile to the northwestward of Cow Point, in the eastern passage and close in with the eastern shore of the bay, lies a low, thickly wooded island, called **Shoppe's Island.** It is about a quarter of a mile from the nearest land, (which is called Shoppe's Point,) and will be recognized as the low, cleared, grassy point on the eastern shore, with a group of houses on it in range with a clump of black-looking trees. There is no passage inside of Shoppe's Island; but just to the westward of it is the entrance to Pond Cove,—easily recognized by Pond Cove Island on its western side, low and sandy at its southern end, and covered mostly with scrub; and by *the peculiar red rocks* on its eastern side just above Shoppe's Point.

That portion of Englishman's Bay to the northward of Roque's Island and Shoppe's Point is called **Mason's Bay.** There are a number of islands in it, close in shore, which will be mentioned in the description of the northern and eastern shores of the bay.

On the eastern side of the bay the land, as it extends from Cow Point to the northward and westward, becomes lower and shows water-worn, sandy faces. The surface is cleared, cultivated and settled,—the cleared lands being backed by thick woods, separating them from Little Kennebec River. To the westward of the sand cliffs a broad strip of meadow-land stretches away to Shoppe's Point, and extends back to a high and thickly wooded hill to the northward.

About half a mile to the eastward of Shoppe's Point is the mouth of a small creek, known as **Englishman's River**, on the shores of which is a settlement. It is of no importance as a harbor.

Shoppe's Point is low, grassy, cleared and settled, and is recognizable by a group of houses standing about the middle of the point in range with a grove of black-looking trees on the top. This is the only grove near here, although scattered trees extend back from it to the higher hills. Shoppe's Point is a mile and an eighth to the northwestward of Cow Point, and with Shoppe's Island, which lies to the southward of it, forms the eastern side of the entrance to an excellent anchorage, called **Pond Cove.** Here the eastern shore of the bay turns abruptly to the northward and runs in that direction one mile and a half to the head of the cove;—the harbor being formed by this eastern shore on one side, and a long island, called **Pond Cove Island**, on the other. This island lies N. and S., is half a mile long, and its southern end is low, sandy, and covered with scrub. The northern end is the highest, and is covered with a thick growth of trees. On the eastern shore of Pond Cove, about a third of a mile above Shoppe's Point, is Red Rock Point, easily recognized by its rocks, which are of a peculiar red color, crowned with a thick growth of spruce and fir. The land at the head of the cove is high and thickly wooded, and a noticeable object on the eastern shore is a large white building from which a wharf extends. This is a lobster-packing house. Here is an excellent harbor

Shoppe's Point.

Red Rock Point.

of refuge, which may be safely entered by strangers, if of moderate draught, under any circumstances, as two and three fathoms are found at the usual anchorage. **Description of Englishman's Bay.**

To the westward of Pond Cove lies the entrance to **Great Cove**, situated between Pond Cove Island on the east and **Ram Island** on the west, and extending to the head of the bay. **Ram Island** is a round, low islet, thickly wooded, lies three-quarters of a mile to the westward of Pond Cove Island and a little over half a mile from the northern shore of the bay,—Great Head bearing nearly **S.**, distant one mile and a quarter.

Great Cove is a beautiful sheet of water, nearly circular in form, affording excellent anchorage, with two and three fathoms water and no obstructions. The banks are thickly wooded, with the exception of a small portion at its head, which shows water-worn faces, is cleared, and has one or two houses upon it. Both Pond and Great coves lie in Mason's Bay.

The northern shore of Mason's Bay runs in nearly an **E.** and **W.** direction, is mostly well wooded, and of moderate height. A mile and a quarter to the westward of Pond Cove Island is the entrance to Chandler's River, which flows into the bay on its northern side, about midway between its eastern and western ends. It is really only an arm of the bay, and runs nearly **N.** and **S.** for a little over two miles to the small settlement of Jonesboro'. The entrance is divided by a low and thickly wooded islet, known as **Fellows' Island**, which will show at its southern end a bare, rocky point backed by scrubby fir trees, and a long reef, bare in some places at high water, making off from it about **S.** by **E.** for nearly five hundred yards. The eastern channel, which is the narrowest, and is not safe for strangers, leads between **Fellows' Point**, the north point of the island, and **Knips' Point**, the eastern point of the entrance to the river. Behind this point is a small cove, called **Sawyer's Cove**, with partly cleared shores showing sandy faces; and there is a ledge, scarcely covered at high water, off Knips' Point. At low water there is no passage through the eastern channel. **Chandler's River.**

The main entrance to the river is between Fellows' Island on the east and **Rodgers' Island** on the west. The latter lies close in with the mainland on the western bank, and is thickly wooded. Its northern point, which is grassy and covered with trees, is called **Rodgers' Point.** In the middle of this channel lies an islet, about fifteen feet high, composed mostly of sand and pebbles, and destitute of all vegetation except a little grass on top. This is Little Mark Island, and is to be left to the eastward coming in. **Little Mark Island.**

The western point of the entrance to Chandler's River is known as **Newbury Point**, and is low and rocky, covered with scrubby bushes and a few spruce. It forms also the northern point of entrance to the Western Branch of Mason's Bay, which here makes off to the westward for about two miles;—its southwestern point of entrance being called **Farnsworth's Point.** Nearly in mid-channel of Western Branch will appear (except at high water, when it is awash) a round rock, called **Seal Rock**, which must receive a berth of one hundred yards. To the northwestward will be seen **Little Hen Island**, low and covered with scrub and a few trees. Both banks are thickly wooded; but at the head of the branch cleared and settled lands are seen.

About a third of a mile above Newbury Point is Look's Head, high and thickly wooded. Here the two shores of Chandler's River approach each other, leaving but a very narrow passage between, which is, however, entirely unobstructed, and may be safely navigated by keeping in the middle. After passing **The Narrows** (which are nearly half a mile long) the river widens into a sort of bay about half a mile wide. Its western shores and those at its head are mostly cleared, cultivated and settled. **Look's Head.**

At the northern end of The Narrows, and on the western bank, is **Look's Point**, a quarter of a mile above the head of the same name. It has two or three houses on it, and is easily distinguished by the sand cliffs at its eastern end, at the foot of which lines of stones have been laid as a sort of sea-wall. The surface is under cultivation. Behind the point makes in **Look's Bay.**

On the eastern shore, abreast of Look's Point, a long, narrow cove, called **Tenney's Cove**, makes in to the eastward, at the head of which a small creek, called **Tenney's Creek**, discharges itself. Both banks are wooded; but its northern point of entrance, called Board Point, is low, with a few spruce and small fir trees fringing its edge, and a long, bare reef extending off from it two hundred yards. **Board Point.**

There are some wooded lands in Look's Bay, but the shores are mostly cleared and cultivated, and show sandy, water-worn faces.

On the northern side of Board Point makes in **Tide Mill Creek**, which runs first to the eastward, and then for about three-quarters of a mile to the northward, to the mills. The northern side of the entrance to this creek, called **Deep Hole Point**, is woody, and has water-worn, sandy faces, and takes its name from a deep hole said to exist in this vicinity.

On the western bank, about three-quarters of a mile above Look's Point, is a low, thickly wooded point, called **Calton's Point**, nearly opposite to, but a little above, Deep Hole Point. Here the river becomes narrower, with a width of about a quarter of a mile, and the channel leads to the westward,—the course being about **N.** ¼ **W.**, between cleared and cultivated banks. The western shore is grassy and has a gentle slope, while the eastern banks are composed of water-worn, sandy faces, backed by grassy and cultivated lands.

The settlement of **Jonesboro'**, about two miles above Look's Point, is a small hamlet of little importance, standing on cleared, grassy land. There is a probability, however, of some coasting trade being attracted hither on account of the granite quarry lately opened on the eastern shore, about half a mile below the village. A long wharf, with the necessary derricks, has been built here for loading the stone-vessels.

At Jonesboro' the river turns abruptly to the westward, but above this point does not merit any detailed description. It is usually known as **Mill Creek** beyond the settlement.

Western Branch of Mason's Bay. The Western Branch of Mason's Bay, as before mentioned, makes in to the westward, between Newbury Point and Farnsworth's Point. In the middle of its mouth lies **Rodgers' Island**, which is thickly wooded. The main channel leads between Newbury Point and the northeastern point of this island, called **Rodgers' Point**, which is grassy, of moderate height, and covered with trees. Nearly in the middle of the channel off Rodgers' Island lies a round rock, awash at high water, called **Seal Rock**.

All of the shores of the Western Branch are well wooded with scrubby trees. There are no cleared lands or settlements until you reach its head, where the clearings begin. Here there is a little village or hamlet, forming part of the township of **Jonesport**.

Little Hen Island. At the northern end of the passage, between Rodgers' Island and the western shore, lies Little Hen Island, small, low, and covered with scrub and a few trees. Here the flats, which are dry at low water, begin; and above this there is no passage except at high water. The only trade in this part of the bay is in cordwood.

The western shores of Mason's Bay have a general course from Kelly's Point **N NE.**, and are diversified with cultivated and cleared lands and thickly wooded slopes. The land is not very high, and settlements are few. This shore is generally shoal in its approaches, and should receive a berth.

About two hundred yards above Parker's Head (the southwestern point of Roque's Island) a long bar makes out in a **W SW.** direction about a quarter of a mile. It is quite shoal, and should be buoyed. From the Jonesport shore, above Parker's Head, another long point, covered with boulders, extends for nearly three-quarters of a mile in a **SE.** by **S.** direction, and is generally known as *Rodgers' Bar*. With Parker's Bar on the opposite shore it greatly obstructs this passage, as the ends of the two bars overlap, although there is a wide channel between them. It requires considerable care to avoid being set on to one or the other. Proper directions will be given for this passage, but strangers are not advised to attempt it until both bars have been buoyed.

DANGERS

IN APPROACHING AND ENTERING ENGLISHMAN'S BAY.

I. ***Coming from the Eastward.***—Many coasters and fishermen use the passage which leads along shore, between Fan and Hickey's islands, up to Cow Point. This is an excellent and almost unobstructed passage,—the only danger being the ledge off the northern end of Hickey's Island. This ledge is an extension of the island, and is known as *Hickey's Island Point*. After passing it there are no dangers; but the main entrance from the eastward is, as before mentioned, between the Scabby Islands and The Brothers. In approaching this channel do not stand too far to the westward,

Jumper's Ledge. as the dangerous rock known as Jumper's Ledge lies to the southward of Pulpit Rock. This ledge has six feet on it, and is marked by a spar-buoy, painted red and black in horizontal stripes, placed in five fathoms about fifty yards to the eastward of it. Vessels, in order to avoid this ledge, must not stand farther to the westward than to bring Pulpit Rock to bear **N.** by **W.** In this passage, after entering, look out—first, for the reefs off

Shag Ledge. Shag Ledge, which here make off to the southwestward a considerable distance; but by keeping the middle of the passage they are easily avoided. After passing this ledge do not approach the western side of the channel too closely, to avoid the *Cod's Head*, a small rock, out at low water, which lies a quarter of a mile to the southwestward of Hickey's Island, and is not buoyed. After passing it the channel is clear, and it is only necessary to keep clear of the banks on either hand.

Great Head, however, (the northeastern point of Roque's Island,) is quite bold-to, and may be closely approached.

Squiers' Point Ledge. If intending to anchor in Shorey's Cove, beware of Squiers' Point Ledge, a long reef making out from Squiers' Point in an easterly direction, and nearly all out at low water. To avoid it, if the tide is in, give the point a berth of five hundred yards. At low water the bare rock may be approached within one hundred and fifty yards.

Bound up Chandler's River there are no obstructions until near Fellows' Island, when there will be seen to the eastward an islet, composed mostly of sand and pebbles, with a little grass on top, called **Little Mark Island**, which must be left to the eastward. After passing it there are no dangers, although the channel is very shoal. It is only necessary to give the points a small berth in passing them, or, in other words, to keep in the middle of the river.

Seal Rock. Bound into the Western Branch, look out for Seal Rock, which lies nearly in the middle of the passage between Rodgers' Island and Newbury Point, and is awash at high water. After passing it, keep as nearly as possible in the middle of the passage to avoid *Rodgers' Island Point*, a line of bad ledges, awash at high water, making off from the northern end of the island about three hundred yards. When clear of these the course leads to the westward, passing to the northward of *Mason's Bay Ledge*, a dangerous rock, covered at high water, lying **W.** by **N.** from the northern end of Rodgers' Island, at a distance of six hundred yards.

The passage between Rodgers' Island and Farnsworth's Point is exceedingly narrow,—the channel being nearly closed by a long sand-spit making off from the mainland and known as Flake Bar. Farnsworth's Point is also sometimes called **Flake Point.** *Flake Bar.*

The southeastern point of Rodgers' Island should not be approached closely, as there is *a reef making out from it about a hundred yards*, bare at low water.

The southern point of Fellows' Island has a long reef making out from it in a **S.** by **E.** direction for nearly five hundred yards, and bare in places at ordinary high water.

Strangers should not attempt the passage into Western Branch, which leads between Rodgers' Island and Farnsworth's Point. Unless of light draught, vessels should always anchor in Pond Cove or Shorey's Cove.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING ENGLISHMAN'S BAY.

I. ***Coming from the Eastward, through Fan Island Channel.***—The course through this channel to clear Cow Point is **W.** ¼ **S.**, which may be continued until the passage is fairly open into the bay, when steer **NW.** ¼ **W. Nearly**, for Great Head. *If bound into Pond Cove, when* abreast of Shoppe's Island haul gradually around the island to the northward, and steer **N.** ½ **E.**, having Pond Cove Island on the western side and Red Rock Point on the eastern. Anchor off the factory, in three fathoms water, soft bottom; or run farther up into the cove, according to draught of water. There are no dangers.

Bound into Great Cove: Continue the course to the northward for Ram Island until the passage between it and Pond Cove Island is fairly opened, when steer **N.** by **E.** ½ **E.**, and anchor at discretion, in from two to three fathoms. There are no dangers.

Bound into Shorey's Cove: Continue the course **NW.** ¼ **W.** for Great Head. Round the head into the harbor, but be careful not to go too near Squiers' Point. Anchor at pleasure, in from two to three fathoms at low water. The holding-ground is excellent.

Bound up Chandler's River, take a pilot; but, should it so happen that none can be obtained, continue the course to the northward, past Ram Island, and enter midway between Fellows' and Rodgers' islands, leaving Little Mark Island to the eastward. When about midway between Newbury Point and Fellows' Island turn to the northeastward, steering about **NE.**, between the island and the point, until The Narrows are fairly open.

The Narrows may be safely passed by keeping in the middle, after which the course is nearly **N.** by **E.** for Calton's Point, to the eastward of which you must pass. After passing it there are no directions necessary, except to keep in the middle of the river until up with the quarry wharf. Not more than four or five feet at low water can be carried up to Jonesboro', and vessels of light draught only, can enter the river.

Bound into Western Branch: When between Fellows' and Rodgers' islands, keep the middle of the passage to the westward until past Rodgers' Island Point, when steer **W.** ¼ **N.**, heading midway between two high sand cliffs, with gently sloping grass-lands between them, which will be seen at the head of the bay. This course clears Mason's Bay Ledge. Anchor off Little Hen Island, unless it be high water. Above this no sailing directions can be given, as a pilot must always be taken by strangers wishing to go above Great Cove. It rarely happens that one cannot be obtained for Chandler's River or Western Branch, and it is not safe to attempt to enter without one.

II. ***To enter from the Eastward, by the Main Channel.***—After passing Libbey Island Light-house keep to the westward until midway between the Scabby Islands and The Brothers, when a **NW.** course will lead up the middle of the passage. After this follow the directions previously given.

APPROACHES TO ENGLISHMAN'S BAY FROM THE WESTWARD.

There are dangerous shoals off Petit Manan; and the passages among the islands in Moos-a-bec Reach are narrow and intricate; therefore, as a rule, strangers should always pass to the southward of the islands, and between Petit Manan and Head Harbor. The high lands of the latter and of Steel-Coat or Steel Harbor Island will, in that case, be made first. Off the southern end of the latter will be seen Mistake Island, a rocky islet of moderate height, with a stunted growth of trees near its northwestern end, and a light-house, showing as a tall white tower, on its southern end. The surface near the tower is bare of trees and rocky. A white light of the second order, revolving once every thirty seconds, and visible thirteen miles, is shown from this light-house as a guide to Moos-a-bec Reach, Head Harbor and Englishman's Bay, and has been already described on page 55. **Mistake Island.**

Steel-Coat or **Steel Harbor Island** is triangular in shape with the apex to the southward, lies **N.** and **S.**, and is about a mile long. It is just to the southward of Head Harbor Island, and forms, with it, what is known as Head Harbor.

Steel-Coat Island. It is for the most part barren;—bare ledges cropping out here and there over its surface;—and even where wooded, the growth is thin and scanty. **Mistake Point**, its southern end, is low, rocky and entirely bare, and runs up towards the north into a high head with a few sickly spruce and fir upon it.

Head Harbor Island lies **S SW.** from Roque's Island, distant about two miles and a half,—its northern point bearing **W. ¼ S.** from Libbey Island Light-house, distant seven miles. It is about two miles long **NW.** and **SE.**, and about a mile wide at its widest part. The shore is of moderate height, diversified with wooded hills and cleared valleys, with houses

Head Harbor Island. dotting the slopes at long intervals. **Head Harbor**, between it and Steel-Coat Island, is an excellent anchorage, much resorted to, but is not very easy of access to strangers. Off the southeastern end of the island is **Man Island**, forming the eastern point of entrance to this harbor, destitute of all vegetation, and remarkable for the bare, black rocks, called **Black Head**, at its southwestern end. There is also an anchorage between Mistake and Steel-Coat islands, called **Steel-Coat Harbor**, and formed by Steel-Coat Island on the east and Mistake and Knight's islands on the west. It is a good anchorage; as the passage, though narrow, is perfectly safe, and there are no obstructions.

A whistling-buoy has been placed off this island two miles **S.** by **E. ½ E.** from the light-house. It is sounded by the motion of the sea; and is a most useful guide in thick weather to Head Harbor, Englishman's Bay or Moos-a-bec Reach.

When within about five miles of the Libbey Islands the course leads to the southward of a great number of islands and islets, most of which are rocky and barren, and all of which lie on the southern side of **Moos-a-bec Reach.** Of

Crumple Island. these the southernmost is called Crumple Island, and is very remarkable in appearance,—looking like a number of round hillocks joining each other. The middle hillock is the highest, and has one or two tall trees upon it, while that which is next to the southwestward is bare, with the exception of two tall leaning trees on its summit which form a conspicuous mark.

To the northward of Crumple Island and close to it is **Fisherman's Island**, low, rocky, and dotted with numerous tall, dead trees, looking somewhat like the spars of shipping. A little further to the northward is **Browney Island**, thickly wooded in the middle, with tall trees projecting here and there above the general outline of woods. The western part of the island is bare of everything excepting numerous dead trees, while the eastern end is a high, bare, rocky head, sloping gently to the shore-line.

Great Wass Island. The high, wooded lands next to the eastward of Fisherman's and Crumple islands are on Great Wass Island. This is a large and very irregularly shaped island, lying **N.** and **S.**, and about four miles long. Its northern half is usually called **Beal's Island**, and lies on the southern side of Moos-a-bec Reach. Great Wass Island is about a mile and a half to the westward of Head Harbor Island, but the passage between them is so full of islets, ledges and sunken rocks as to be entirely unfit for strangers.

Rounding Head Harbor Island, you will open Englishman's Bay;—the course leading to the northward along the eastern shore of the Island, with the Spruce Islands to the eastward, and the high lands of Roque's Island appearing behind them. **Great Spruce Island**, the easternmost of the two, will appear as a high, rocky island, partly wooded and partly bare, while **Little Spruce Island** will be recognized by two high, round heads, whose summits are covered with a scanty growth of scrubby trees.

Seguin Island. Close to the northern shore of Head Harbor Island lies Seguin Island, easily recognized by the whitish rocks cropping out here and there over its surface and two spruce trees on the eastern side of its summit. It lies on the south side of **Seguin Passage**, in Moos-a-bec Reach, and must not be confounded with the Seguin Island off the entrance to **Kennebec River.**

To the eastward of the Spruce Islands numerous rocky islets will be seen, apparently shutting off all approach to the bay on that side. On the western side, and nearly ahead, **Mark Island** will appear,—high, bluff and rocky, with a large round head on its western end, and entirely covered with a dense growth of trees. When abreast of it, the eastern passage into Englishman's Bay is fairly opened, with **Ballast Island** in the middle. This is a small, bare island, with two or three dead spruce trees standing like spars over its surface.

On the eastern side of the passage will be seen the high, rocky and wooded shore of Roque's Island, the channel leading between this and Ballast Island. To the eastward will be seen the eastern entrance to Moos-a-bec Reach, which will appear full of islets, with a large settlement on its northern shore. This is the little village of **Jonesport.**

The western shore of Englishman's Bay has a general course **N NE.**, and will appear as moderately high land, diversified with cleared and cultivated patches and thick woods. Houses may be seen at long intervals, this coast being very thinly settled.

DANGERS

IN APPROACHING AND ENTERING ENGLISHMAN'S BAY.

II. ***Coming from the Westward.***—After passing the ledges off Petit Manan Island, there are no obstructions until near Mistake Island. Do not come too close to Man Island, *as there is a sunken rock, with a few feet of water on it,* one hundred yards **SW.** from Black Head.

You may pass tolerably close to the eastern shore of Head Harbor Island, and the same is true of Mark Island; but in approaching the latter beware of the very dangerous Eastern Ledges, lying in

the middle of the passage, but on the eastern side of the channel. They are two small ledges, one of which is bare at low water, and lie **E NE.** and **W SW.** from each other, with from six to ten fathoms between them, and are not buoyed. The easternmost ledge, which is dry at low water, is about three hundred yards from the western rock. Both are bold-to. These ledges bear **S.** from Spruce Island Gut, one mile and three-eighths; **E.** by **N.** ½ **N.** from Seguin Island, one mile and a half; and **E.** by **S.** ½ **S.** from Mark Island, one mile and an eighth distant. The channel between them and the islands is very deep and entirely unobstructed. After passing them the channel is clear until near the southwestern end of Roque's Island, (Parker's Head,) when you must look out for Parker's Bar, making out from the island a little above Parker's Head in a **W SW.** direction about a quarter of a mile. It is not buoyed, and must be carefully avoided. Haul to the northwestward to clear it, and when past it haul again to the northeastward to avoid *Rodgers' Bar*, which makes out from the Jonesport shore to a distance of half a mile, and is mostly bare at low water. Neither is this bar buoyed, which renders this channel unsafe without a pilot; but buoys have been recommended on both bars.

Eastern Ledges.

Parker's Bar.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING ENGLISHMAN'S BAY.

III. ***Coming from the Westward, Outside of everything.***—Give Petit Manan Light-house a berth of five miles, and steer **NE.** by **E.** ¾ **E.** until up with Head Harbor Light-house, (sometimes called Moos-a-bec Light-house,) when haul to the northward, giving it a berth of about a mile. Thus you will pass to the northward of the whistling-buoy about a mile. Keep the course past the entrance to Head Harbor and steer to the northward, along the shores of the island, until the eastern end of Mark Island bears **NW.** by **N.** ¾ **N.**, when steer that course until within three-eighths of a mile of the island. This course passes seven-eighths of a mile to the eastward of Eastern Ledges, and carries not less than sixteen fathoms water. Now steer **N.** ½ **E.**, carrying not less than six fathoms, until past Ballast Island and approaching Parker's Head, when edge off to the westward to avoid Parker's Bar. When clear of this, steer **NE.** ½ **N.** to avoid Rodgers' Bar, on which course there will not be less than four fathoms.

When up with Squiers' Point, if bound into Shorey's Cove, round the point to the eastward, (giving it a berth of about five hundred yards to avoid the ledge,) and anchor at discretion, in from two to four fathoms water.

Bound to Chandler's River, steer about **N NE.** until up with Fellows' Island, after which follow the directions given for the river on page 59.

IV. ***To pass inside of Simms' Rock and enter Englishman's Bay.***—*Simms' Rock* is a dangerous sunken rock, two miles **S.** ½ **E.** from Petit Manan Light-house, and has six feet at lowest tides. A spar-buoy, painted red and black in horizontal stripes, is placed in eight fathoms on the northeastern side of the rock. To go between it and Petit Manan, give the island a berth of about one mile and steer **E.** ¾ **N.**, passing about a mile outside of Head Harbor Light-house and carrying deep water. Round the southeastern end of Head Harbor Island and steer to the northward, carrying not less than six fathoms, until the eastern end of Mark Island bears **NW.** by **N.** ¾ **N.**, when steer for it, and follow the directions given above. The course **E.** ¾ **N.** passes about a mile to the northward of Simms' Rock and about a mile to the northward of the whistling-buoy.

V. ***Having come through Moos-a-bec Reach, to enter Englishman's Bay.***—When abreast of Mark Island steer **N.**, carrying not less than six fathoms, until up with Ballast Island, to the eastward of which you must pass. When past it, haul to the westward to avoid Parker's Bar, and when clear of this danger steer **NE.** ½ **N.** to clear Rodgers' Bar. When up with Squiers' Point, follow the directions given above for Shorey's Cove and Chandler's River.

In beating to windward, keep the view of the sea open to the westward of Parker's Head and Little Spruce Island until past Parker's Bar, and do not approach the western shore nearer than a mile to clear Rodgers' Bar.

In thick weather keep about half a point to the southward of the course for Head Harbor Light-house until you hear the whistling-buoy. Then run for the buoy, and when past it proceed as above directed.

LAKEMAN'S HARBOR.

This harbor, (see page 56,) situated on the southern side of Roque's Island, nearly opposite to Shorey's Cove, is an excellent harbor of refuge, well sheltered from all winds. There are several ways of approach to it from the eastward, and one from the westward, through Roque's Island Narrows; but this latter is much obstructed, and dangerous without an experienced pilot.

Lakeman's Harbor. The eastern passages are, first: One between Lakeman's Island on the north, and Halifax, Anguilar and Shot islands on the south; secondly, one between Halifax Island on the north and The Brothers on the south. This latter passage leads to the westward towards Great Spruce Island, leaving Anguilar and Shot islands to the northward and Pulpit Rock to the southward, and then turns to the northward, running between Spruce Island Point and the Shot Islands into the harbor. The harbor may also be entered by the passage between Great Spruce Island and Pulpit Rock. All things considered, however, strangers are advised rather to attempt to make the Little Kennebec, Pond Cove, or Shorey's Cove, than this harbor, as the passages among the islands have not been surveyed and there may be dangers which are now unknown.

No sailing directions are necessary for either of these channels, except to keep in the middle of the passage. *The harbor cannot be entered at night without an experienced local pilot.*

HEAD HARBOR.

This comfortable harbor of refuge (see page 60) lies on the southern side of Head Harbor Island, sheltered from southerly winds by Steel-Coat or Steel Harbor Island, and is much used,—being secure from all winds and easy of access. The approach from the westward is not safe, as the passage between Great Wass Island and Head Harbor Island is full of islands and shoals; but the main entrance is from the southward, between the southeastern point of Head Harbor Island and Mistake Point, the southern end of Steel Harbor Island.

On approaching it from the eastward or southward the light-house on Mistake Island, on the western side of the entrance, will be the first prominent object noticed. **Mistake Island** is bare, except for a stunted growth of trees near its northwestern end.

Man Island, on the eastern side of the entrance, is remarkable for the high, bare, black, rocky head at its southwestern end, called **Black Head.**

A very peculiar looking, long, white, bare and rocky hill, with a sharp peak in the middle, is seen at the northern end of the harbor on coming in, and is known simply as **The Head**, giving the name to the harbor.

The shores of **Steel-Coat Island** are rocky and of moderate height, with a growth of sickly trees on them,—but **Mistake Point** is low, rocky and entirely bare.

The only danger in entering Head Harbor is *the sunken rock lying a hundred yards* **SW.** *from Man Island.* It has a few feet on it at low water, and is not buoyed. (See page 60.)

A whistling-buoy, painted red and looking like a nun-buoy, is placed two miles **S.** by **E.** from Head Harbor Light-house, and is an excellent guide to the entrance in thick weather.

SAILING DIRECTIONS.

To enter this harbor from the Eastward.—Bring the light-house on Mistake Island to bear **SW.** by **S.**, and run for it until you open the middle of the passage bearing **N.**, when steer **N.** ½ **E.** up the middle until up with White's Point, (or Kelly's Point, as it is generally called,) which is the western point of entrance to the Cow Yard or Inner Harbor. Here anchor, or keep off to the northeastward and run into Inner Harbor.

The **Cow Yard** or **Inner Harbor** is a cove of peculiar shape, on the southern side of Head Harbor Island. Its course is first about **N.** by **E.** ½ **E.** for about three hundred and fifty yards, when it turns abruptly to the eastward, running nearly **E SE.** for an eighth of a mile to its head. It is only two hundred and fifty yards wide at its mouth, between Kelly's Point on the west and Killwood Point on the east, and is narrower as it approaches its head. **Kelly's Point** or **White's Point** is rocky, low, and of a white color, bare of trees, but backed by a thin growth of spruce and fir. **Killwood Point** is low, bare and grassy.

To enter the Cow Yard.—When on the **N.** ½ **E.** course, abreast of **Money Island**, (the small rocky island, crowned with scrubby fir and birch, lying to the westward going in,) steer **N.**, passing between Kelly's Point and a bare, rocky islet lying off Killwood Point,—the channel being midway between the point and the islet. Anchor at discretion. There are from two to four fathoms in this harbor, and it is sheltered from all winds; but it is not advisable to enter the Inner Harbor unless intending to stay some time, or unless the sea is uncomfortable in the anchorage off Kelly's Point;—an occurrence of great rarity.

STEEL-COAT HARBOR.

Between Steel-Coat Island on the east and Mistake and Knight's islands on the west there is a narrow passage, with deep water, which leads into what is called Steel-Coat or Steel Harbor. Both shores are bold-to, and there are no obstructions in the channel, while the harbor itself is wide and perfectly sheltered. A peculiarity of the passage is that the rocks are marked with names painted upon them. There are no sailing directions necessary for it, other than to run for the light-house until within a hundred yards of it, and then steer nearly **W.**, which course will lead into the passage. After entering keep the middle until you come out into the harbor, where you may anchor at discretion, in from two to three fathoms, soft bottom.

LIGHT-HOUSES.

NAMES.	Latitude N.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		m. s.	Feet.	
Libbey Island Light-house..	44 34 5	67 22 2	4 29 28.1	Fixed.	.....	52	12
Moos-a-bec Light-house	44 28 27	67 31 55	4 30 7.7	Revolving.	0 30	65	13

TIDES.

In the neighboring port of Jonesport a pretty good determination of the times and height of flood and ebb tide has been obtained, and will serve, approximately, for this bay. The predictions of times and heights of high water at Jonesport will be found in the "**Tide Table for the Atlantic Coast,**" published annually by the Coast Survey. The mean rise and fall of tides in Englishman's Bay is about thirteen feet; and the time of high water after full and change is, approximately, $11^h\ 15^m$.

VARIATION OF THE COMPASS.

The magnetic variation for 1879 is, approximately, 17° 8′ W., with an annual increase of 2′.

ICE IN ENGLISHMAN'S BAY.

Ice forms in this bay and its harbors about the same time and in the same manner as in Machias Bay;—and, like the formations in that bay, is purely local, except during severe winters, when a conglomerate of "field" and "drift-ice" is formed, completely obstructing navigation. (See also page 50.) Winds have little influence in preventing or assisting the local formations; nor have the tides; but both assist in bringing in drift-ice from outside, and in carrying it off when the mass is broken up. Calms and light winds from the northwestward are favorable to a rapid increase in the local formation; while strong winds break it up and force it on shore to leeward,—thus blocking up the harbors on that side. The bay is generally dangerous to navigate, even in moderate winters, from January 1st to March 1st; and in severe winters is closed from December to April.

In 1874–5, sailing-vessels found navigation exceedingly hazardous as early as the middle of January; and impossible after the twenty-fourth of that month. During February all access to the bay, or even a near approach to it, was cut off by an immense field composed of drift-ice "packed" together and frozen into a solid mass, which not only filled the bay, but extended several miles out to sea. The southwesterly, easterly and northeasterly winds which occurred in the latter part of that month broke this mass up and carried much of it to sea; but it did not finally disappear from the bay until the latter part of March; and the harbors remained, for the most part, closed several weeks later.

MOOS-A-BEC REACH.

Vessels proceeding to the westward along the coast may, when abreast of Libbey Island, go outside of the light on Mistake Island, and steer **W.** by **S.** ½ **S.** to clear Long Island, (off Blue Hill Bay;) or they may go through Moos-a-bec Reach. This is a narrow passage, formed by the mainland on the north and a group of islands on the south, of which Head Harbor, Beal's, Norton's and Sheep islands are the principal. The reach is full of dangerous ledges; its channels are intricate, and it is not safe for a stranger without full directions. Inasmuch, however, as it is much the shortest of the passages between Machias and Mount Desert, and affords excellent anchorage in all winds, it is commonly used by coasters. Its length, from Kelly's Point on the east to Moose Neck on the west, is a little over seven miles; but its width varies,—being in some places not over a third of a mile, and in others less than a quarter, while in its widest part it is over a mile from shore to shore. There are several channels leading into it; but those from the southward, of which there are three, are only used by vessels desirous of making a harbor, and are not safe for strangers under any circumstances. The passage used by vessels coming along shore enters on the east between Kelly's Point and Head Harbor Island, passes between the mainland of Jonesport and the northern shores of Beal's and Norton's islands, and, threading the intricate channels among the islands to the westward, passes between Sheep and Ram islands (through what is called Tabbott's Narrows) to Cape Split, the eastern point of the entrance to Pleasant Bay. Hence, the way is clear to Petit Manan. Or, after passing through Tabbott's Narrows the course may be laid to the southwestward, leaving Nash's Island (on which is a light-house) to the northward; and, after passing it, the course may be shaped for Petit Manan.

Mark Island.

Coming from the eastward, Mark Island is first met with, lying in the middle of the eastern entrance. It is the landmark for vessels bound to the westward through the reach; lies three-quarters of a mile from the northern shore of Head Harbor Island, and is high, rocky, and entirely covered with a dense growth of trees. On its western end is a large, round head, which, when seen from the eastward, will appear over the trees as if it were in the middle. The shores are bold-to, except on the southern side, where there is a ledge extending out an eighth of a mile. The Seguin Passage passes to the southward of this island; but vessels coming along shore generally pass to the northward of it.

Seguin Island. Next to the southward of Mark Island, and close in with the northern shore of Head Harbor Island, lies Seguin Island,—the passage between it and Mark Island, called **Seguin Passage**, being a little over half a mile wide. It is low, has whitish rocks cropping out here and there over its surface, and two spruce trees standing on the eastern side of its highest point. Seguin Passage has not less than four fathoms, and is mostly used by steamers. Ten feet at low water may be taken between Seguin and Head Harbor islands; but the passage is narrow, full of rocks, and fit only for small boats.

Head Harbor Island. Head Harbor Island (already described on page 60) lies about two miles and a half to the southwestward of the Spruce Islands,—its northern end bearing from Libbey Island Light-house **W.** ¼ **S.**, distant seven miles,—and extends nearly **NW.** and **SE.** for a little over two miles. Its shores are diversified with wooded hills and cleared valleys, and dotted with houses at long intervals.

The Virgin's Breasts. About three-quarters of a mile to the westward of Mark Island will be seen The Virgin's Breasts, or the **Virgin Islands**, as they are sometimes called. They are three in number,—one lying on the northern side of the passage about three-eighths of a mile to the eastward of Kelly's Point, and the other two lying close together on the southern side of the channel, separating it from the Seguin Passage. The larger of these two is called **The Nipple**; while the northern island is often called **Virgin Island**. It has a round, grassy top, without trees. All of the islets are surrounded by dangerous ledges.

Kelly's Point. Kelly's Point, the northern point of the eastern entrance to the reach, is flat and grassy, of moderate height, and backed by a bold, bare, rocky head, which, on the western side, juts into the water. From this point to the westward the northern shore is mostly cleared and settled, of moderate height and backed by woods. The village of **Jonesport** occupies nearly all of this shore,—extending almost to the mouth of Indian River.

Sawyer's Cove. One mile to the westward of Kelly's Point is the entrance to Sawyer's Cove, a shallow cove, about half a mile long, and a little over a quarter of a mile wide at its mouth, running **NE.** and **SW.**, and forming part of the water front of Jonesport. A few hundred yards to the westward makes in a small creek, called **Sawyer's Creek.** From this creek to Hopkins' Point the shores are of moderate height, with occasional sandy, perpendicular faces, thickly settled and backed by woods.

Sheep Islands. Opposite to Kelly's Point, on the southern side of the channel, and three-quarters of a mile to the westward of The Nipple, lie the Sheep Islands, known, respectively, as **Sheep Island** and **Little Sheep Island.** The latter, which is the northernmost, is a low, rocky islet, surrounded by ledges, and is three-eighths of a mile **E.** by **S.** ½ **S.** from Pig Island, and five-eighths of a mile **S SW.** from Kelly's Point. About five hundred yards **S.** by **W.** from it lies Sheep Island, about three hundred and fifty yards long **NW.** and **SE.**, and a quarter of a mile to the northwestward of the western end of Head Harbor Island. Between Sheep Island and the latter is the best channel into the passage between Head Harbor Island and Great Wass Island, which leads to the southwestward, towards a low, rocky islet (covered with grass and with a single tree upon it) lying in the middle of the passage, and called **One Bush Island.** Strangers, however, must not attempt this passage.

Pig Island. Nearly half a mile to the westward of Little Sheep Island, and still on the southern side of the channel, is Pig Island, nearly half a mile long **W.** by **N.** and **E.** by **S.**, of moderate height and mostly bare, with ledges cropping out here and there over its surface, and a few stunted spruce. There is no passage between it and Great Wass Island except at high water.

A low islet, lying about **S SW.** from the southwestern point of Pig Island, is called **Sawyer's Island**, and at low water is joined to the former.

Great Wass Island. About an eighth of a mile to the southward of Pig Island is the northern end of Great Wass Island, (the largest of the islands in this vicinity,) which is very irregular in shape and about four miles long. Its shores are rocky, of various heights, thinly settled and generally well wooded. About a mile and a half below its northern end it is nearly cut in two by two coves which make in on its eastern and western sides.

French-House Island. Next to the westward of Pig Island is French-House Island, also on the southern side of the reach. It lies in the mouth of Alley's Bay, about an eighth of a mile from the Beal's Island shore and a little over half a mile from Pig Island; is of moderate height, rocky, and has one conspicuous spruce tree upon it. At low water it is connected with Beal's Island by a reef of rocks.

Beal's Island. Beal's Island is the northwestern part of Great Wass Island, with which it is joined at low water. It is a mile and an eighth long **N.** by **E.** and **S.** by **W.**, has an average width of five-eighths of a mile, and lies on the southern side of the reach, directly opposite to Jonesport. Its eastern, western and northern shores are of moderate height and thinly settled; while on the northwestern side appear sandy, water-worn faces. **Beal's Point**, its northwestern point, is quite low and bare of grass, but has a group of stunted firs some distance back from the shore-line. Between this island and the northern part of Great Wass Island lies **Alley's Bay**, half a mile wide at its mouth, but very shallow. It affords good shelter, however,—the bottom being soft mud, where vessels may lie aground without damage.

At low water Beal's Island is joined at its southeastern end to **Great Wass Island**; but at high water boats may pass between them through a narrow, rocky passage, called **Flying Place**, into Alley's Bay.

Passing Beal's Island, you open a very small, bare, rocky island, lying close in with its western shore, entirely destitute of vegetation,—being a mere ledge,—and called **Barney's Little Island.** Next to the westward, and still on the southern side of the reach, lies a group of islands to the westward of Beal's Island, and called, respectively, beginning with the easternmost, the Sheep Islands, Norton's Island and Pomp's Island.



Entrance to Moos-a-bec Reach from the Eastward, Mark Id. bearing N. W by W. distant 3 Miles.



Entrance to Moos-a-bec Reach from the Westward, Nashs Id. Lt. Ho. bearing E.N.E. distant 2 Miles.



Approaches to Head Harbor, the Lt. Ho. bearing S. W. by N. ½ N. distant 24 Miles.

MOOS-A-BEC REACH

MAINE

Scale 4000

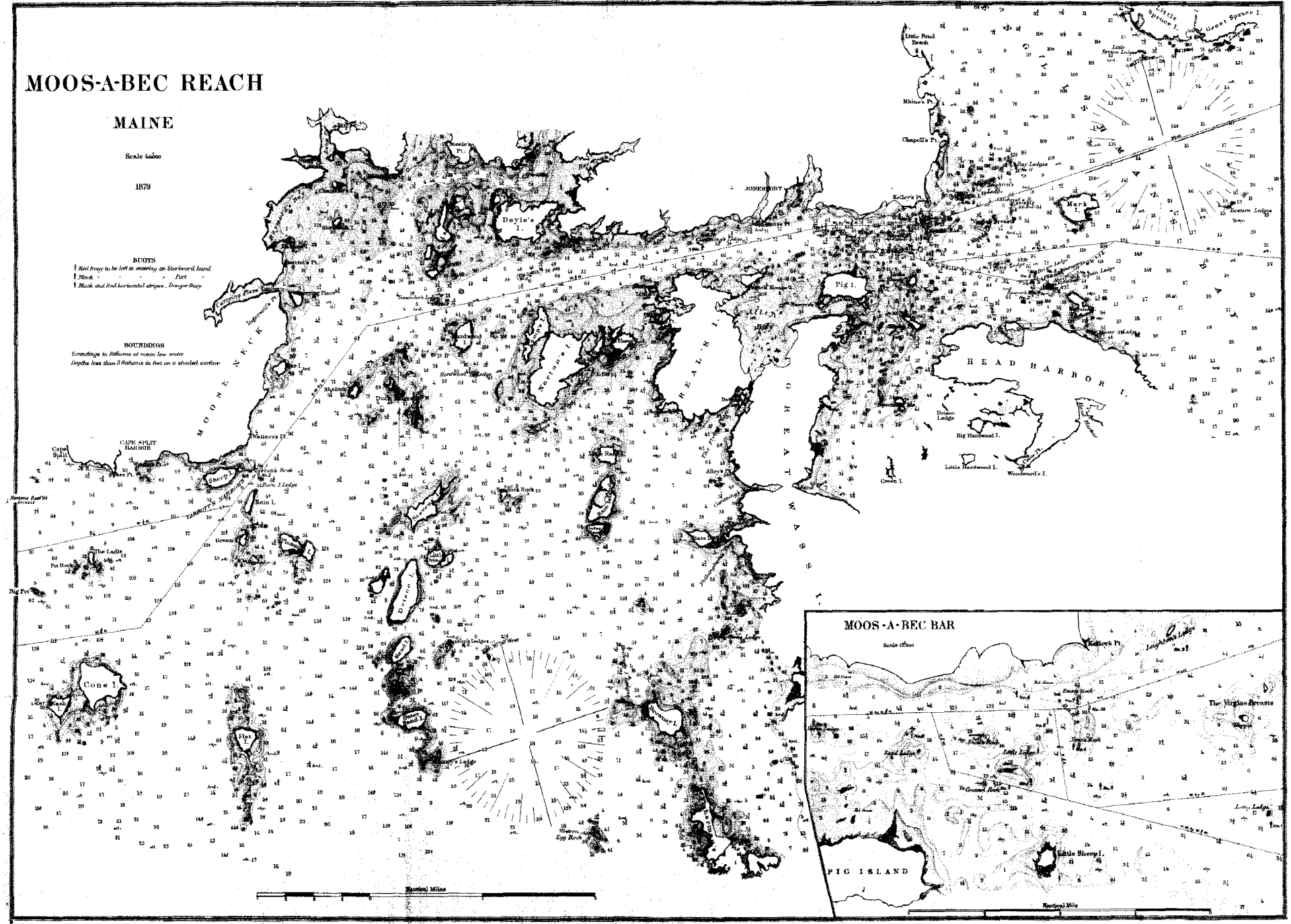
1879

BUOYS

Red buoys to be left in entering on Starboard hand
Black " " " " Port "
Black and Red horizontal stripes Danger Buoy

SOUNDINGS

Soundings in fathoms at mean low water
Depths less than 3 fathoms in feet on a shoaled surface



Sheep Islands. The Sheep Islands lie about a quarter of a mile to the westward of Beal's Island, and are a group of three,—the easternmost of which is low and rocky, and has a group of spruce trees on it, in the centre of which stands a lone tree. At low water it is connected with Beal's Island by ledges and flats. The others are small, bare, rocky, and have only tree stumps upon them.

Norton's Island. One hundred and fifty yards to the westward of the Sheep Islands is Norton's Island, three-quarters of a mile to the westward of Beal's Island, three-quarters of a mile long, and lying **NE.** and **SW.** Its shores are low, composed of yellow, weather-beaten rocks, and covered with a thick growth of scrubby trees. There is no passage at low water between this island and Beal's Island.

Pomp's Island. Pomp's Island lies close to the northwestern shore of Norton's Island, to which it is joined at low water, and extends in a **NE.** and **SW.** direction for nearly half a mile. It is low, rocky and almost bare. Its northeastern end, which is the highest land on the islet, has a somewhat bluff appearance, and is bare except for clumps of stunted fir dotting the surface here and there. The island was formerly thickly wooded, but the stumps of the trees only remain.

On the northern side of the reach, directly opposite to French-House Island, is **Old House Point**, the eastern point of entrance to Sawyer's Creek; about seven-eighths of a mile to the westward of this is **Donovan's Cove**, shallow, and of no importance; and the same distance to the westward of this, and opposite to Norton's Island, is Hopkins' Point, the eastern point of entrance to Indian River. It is low and grassy, with a very few spruce and fir trees on top. Close to it, and exactly across the mouth of the river, lies **Doyle's Island**;—the main channel of Indian River leading along its northern shore. The island is low and wooded, except near its eastern end, where the land is cleared and has a house and outbuildings on it; and is separated from Hopkins' Point by a narrow passage about one hundred and fifty yards wide, called **Whiting's Passage.** Two spruce trees, which stand close together on its southwestern point, serve as a distinguishing mark for recognizing the entrance to Indian River, as there are no other trees on the point.

Hopkins' Point.

Goose Islands. The Goose Islands, which lie a little over a quarter of a mile to the westward of Doyle's Island, are six in number. They are all low and well wooded, except that one which is next to the southernmost, which is small and low, and has only a few scattered spruce on its flat, grassy surface. The third island of the group is very thickly wooded, and has a hut on its eastern shore near the northern end. The channel into Indian River passes to the westward of these islands, and then leads to the eastward along their northern faces. A large white boulder on the southern end of the northern island forms a conspicuous object from seaward.

Hardwood Island. On the southern side of the channel, nearly opposite to the Goose Islands, and five-eighths of a mile to the westward of Pomp's Island, lies Hardwood Island. It is a quarter of a mile long **N NE.** and **S SW.**; and, seen from the eastward, shows dark-wooded heads at its northern and southern ends, with somewhat lower land between them;—the rest of the island appearing partly bare, and partly wooded with a stunted growth of trees. Seen from the southward and westward, its southern end shows a remarkable white, rocky point, almost bare; and both ends appear to be covered with small trees. This island is surrounded by shoals, but there is a good passage (obstructed, however, by *a ledge with seven feet at low water*) between it and Pomp's Island. There is another good channel on its eastern side, (between it and the Duck Ledges,) half a mile wide, and with not less than three fathoms in it. The main channel of the reach leads along the northern side of Hardwood Island and is quite narrow at this point,—being obstructed by *a bad ledge nearly in the middle of the passage.* After passing this ledge the channel continues to the westward towards the mainland, passing to the northward of the Duck Ledges, which lie about five-eighths of a mile **W SW.** from Hardwood Island. They consist of three large, bare rocks or ledges, all uncovered at half-tide, and the northernmost almost bare, showing as a white, bare, rocky islet with a sort of grass cap on top. These ledges should receive a wide berth in every direction, unless you intend passing to the southward of them, where they are comparatively bold-to,—the shoals not extending off farther than an eighth of a mile in that direction.

Duck Ledges.

Next to the westward of the Duck Ledges, and a little over a quarter of a mile from the dry ledge, is **Shabbit Island**, low, rocky and wooded, and about an eighth of a mile long. On its southern side it is tolerably bold-to, but should receive a berth of at least three hundred yards from vessels passing to the northward of it.

Indian River. Indian River, which makes in to the northward on the western side of Hopkins' Point, is separated from **West River** by a large island, known as **Moose Island.** The western point of entrance to West River is called **Bickford's Point**; and, seen from the reach as you go the westward, will appear barren, rocky and nearly destitute of trees. There are one or two houses on its extremity, but the general appearance of the land is very desolate, and all of the approaches to it are shoal. To the westward the shore forms a deep bight, called Wohoa Bay, into which empty three shallow creeks, having a common mouth, and known, respectively, as **Hicks'**, **Long** and **Mill** creeks. The whole bay is full of ledges, very dangerous for vessels even of the lightest draught. Next to the westward of it is Reynolds' Bay, off which lie three small, rocky islets, known as **Chandler's**, **Sheldrake** and **Daniels'** islands. The first mentioned lies off the western point of entrance to Wohoa Bay at a distance of two hundred yards; the second lies a quarter of a mile **S.** by **W.** ½ **W.** from the first; and the third forms the eastern extremity of a long reef making out from the southern extremity of Reynolds' Bay. Both bays are parts of the same large basin which is formed by the curve of the shore. Reynolds' Bay is quite shoal, affords little shelter, and is seldom

Wohoa Bay.

Reynolds' Bay.

Carrying-Place Cove. resorted to. A quarter of a mile to the southward of it lies Carrying-Place Cove, a long and narrow cove, bare at low water, running nearly **E.** and **W.** for three quarters of a mile. It was formerly an Indian carrying-place from Cape Split Harbor to the reach. A small, thickly wooded island, which lies just outside of the entrance, and on the southern side, is called **Carrying-Place Island,** and is an eighth of a mile from the shore, which now takes a turn to the southward, running first about **S. ½ W.** for nearly half a mile, and then about **SW.** nearly a mile, forming the eastern shores of **Moose Neck.** These shores are of moderate height, crowned with woods, but cleared on their eastern slopes, with here and there a house. They are tolerably bold-to, except about midway between Carrying-Place Cove and Tabbott's Narrows, where a small island, called **Bar Island,** lies within two hundred yards of the shore, with shoal water extending about one hundred yards beyond it. This island is nearly opposite to Shabbit Island.

At the southeastern point of Moose Neck begins Tabbott's Narrows; and here the shore turns abruptly, running nearly **W.** for about seven-eighths of a mile to the entrance to **Cape Split Harbor,** and appearing barren, rocky and undulating, with a scanty growth of trees. There is not less than four fathoms into Cape Split Harbor and not less than three at the anchorage, and it is perfectly safe for strangers; but there is little shelter in southerly winds.

Cape Split. Cape Split, on the western side of this harbor, is a remarkable looking headland;—being a high, bare, rocky bluff, except at its southeastern end, where it presents a black, wooded face; and along its southeastern face, where there is a growth of black fir and spruce. There is a very peculiar looking, round, rocky islet, called **The Castle,** lying off the southwestern shore of the cape. It is crowned with fir and spruce, and has perpendicular faces, while the summit is quite flat.

Tabbott's Narrows. Tabbott's Narrows are contained between Sheep Island on the northwest and Ram Island on the southeast, and are not over three hundred and fifty yards wide, with a depth of not less than six fathoms. **Sheep Island** lies within one hundred and fifty yards of the southern shore of Moose Neck, and is somewhat remarkable,—being high, rocky and nearly bare, with the exception of a solitary tree here and there. It is five-eighths of a mile long **E.** and **W.** and tolerably bold-to. Four feet at low water may be carried between it and the mainland.

Ram Island, on the southern side of the channel, lies **N NE.** and **S SW.,** is about three hundred and fifty yards long, tolerably high, rocky, and covered with a very thick growth of trees, giving it a round, bluff and bushy appearance. The woods are so thick as to appear black. **Green Island** and **Plummer's Island,** which lie to the southward and southeastward of this island, are not generally noticed by vessels bound to the westward; as they are not near the main channel. The former is low, bare and rocky, with a grassy surface, but no trees; while the latter is of moderate height and thickly wooded. There is a good passage between them with not less than four and a half fathoms; but it is not safe on account of numerous outlying ledges.

After passing through the Narrows the course continues to the westward towards Cape Split, and the first island met with is on the southern side of the channel, and is called The Ladle. It is a remarkable looking islet, about two hundred and fifty yards long **N NW.** and **S SE.,** and bears a faint resemblance to a ladle upside down. Its southern end is low, bare and rocky, but the northern end is a high, round head, crowned with stunted fir and spruce, and showing perpendicular faces, and is called the **Bowl of the Ladle.** Next to the westward of it, and an eighth of a mile distant, is **The Pot,** a barren rock, about ten feet above high-water mark. Extensive shoals surround both it and The Ladle, and there is no safe passage between them. About half a mile **W SW.** from The Pot lies **The Big Pot,** a high, bare islet, entirely destitute of vegetation, lying **E.** and **W.,** and about one hundred yards long. Its eastern end is high and very steep, with peculiar looking red and yellow rocks on the summit, while those near the water are black.

The Ladle.

Taking the southern passage out of the reach;—after passing the Narrows you must steer to the southwestward, leaving The Ladle to the westward and Green Island to the eastward, and running nearly for Cone Island. This island lies seven-eighths of a mile to the southward of The Ladle, and is about eight hundred yards long. It is low, grassy, and covered with a scanty growth of spruce and pine, tolerably bold-to, except on its southern side, where ledges make off a quarter of a mile, and on its western side, where it is joined, at low water, to **Nash's Island,** a rocky islet about three hundred and fifty yards long, and entirely bare, with ledges making to the southward from it for about a quarter of a mile. On Nash's Island is the light-house, a guide to Pleasant River, Cape Split Harbor and Moos-a-bec Reach. It is a white tower, twenty-eight feet high, connected with the keeper's dwelling by a covered way, and shows a fixed red light, of the fourth order of Fresnel, from a height of forty-seven feet above the sea, visible in ordinary weather twelve miles. Its geographical position is

Cone Island.

Nash's Island Light-house.

Latitude ..... **44° 27′ 51″ N.**
Longitude ..... **67° 44′ 50″ W.**

Cone and Nash's islands should both be left to the southward by vessels entering the reach from the westward.

There are many other islands lying in the approaches to Moos-a-bec Reach from the southward, which will be described in treating of the channels leading into the passage from that direction. Those above described lie in the main channel and on both sides of it.

DANGERS

IN APPROACHING AND PASSING THROUGH MOOS-A-BEC REACH.

I. ***From the Eastward, across Moos-a-bec Bar.***—In coming along shore from the eastward you will first make Mark Island; and, if intending to go in by the northern channel, across the bar,

you pass to the northward of this island, steering towards Kelly's Point. On this course, when up with the eastern end of the island a black spar-buoy will be seen, bearing about **W NW.** and three-quarters of a mile off. This is on the Bay Ledges, which lie a little over three-quarters of a mile **NW.** from Mark Island, extending in a line **E. ½ N.** from Kelly's Point for nearly a mile;—the shoalest water upon them being three feet. Several narrow slues lead among the ledges, but are, of course, fit only for the dory or fishing-boat. The buoy is marked No. 11, and placed on the eastern end of the ledge, in about sixteen feet water. ***Bay Ledges.***

While the general name Bay Ledges is given to the group lying east of Kelly's Point, a particular ledge, with four feet at mean low water, lying to the westward of buoy No. 11, has received the name of Leighton's Ledge. It is a quarter of a mile **W.** by **S.** from the black buoy on Bay Ledges; and between them there is a narrow passage with fifteen feet at low water, but unsafe for strangers. A black spar-buoy (No. 9) is placed in fourteen feet water on the southern side of the ledge, and nearly opposite to the spindle on Gilchrist's Rock. ***Leighton's Ledge.***

The northern shore of Mark Island is quite bold-to.

About three-eighths of a mile **W.** by **N.** from Mark Island, and nearly opposite to the buoy on Bay Ledges, will be seen an iron spindle and cage painted red. This is on *Gilchrist's Rock*, a detached ledge on the southern side of the channel, and bare at low water. The channel between this spindle and the Bay Ledges is about a quarter of a mile wide. Passing it there will be seen ahead, and about three hundred and fifty yards off, The Virgin's Breasts, the two southernmost of the Virgin Islands; and which will appear as two small rocky islands, lying **NE.** and **SW.** from each other,—the northernmost having a grassy top, but the other showing as a mere dry ledge. These islets must receive a small berth to the southward; for although the northern one is pretty bold-to, the southern island, called **The Nipple,** should not be approached nearer than two hundred and fifty yards on account of the bad ledges extending to the northward for nearly an eighth of a mile. ***The Virgin's Breasts.***

When abreast of these islands there will be seen ahead, at distances varying from a half to three-quarters of a mile, three black and two red spar-buoys, which appear to be huddled together in a group. It is necessary for the mariner, in endeavoring to thread the intricate channel in which these buoys are placed, to be very careful of his courses, and especially to remember that the southernmost buoy of the group (which is *black*) is not in this channel at all, but is placed to mark the southern end of Nova's Rock, in the Seguin Passage. It must not be approached by vessels using this northern passage, but *the course must be shaped so as to pass between the red spar-buoy to the northward and the middle one of the three black buoys.* The red spar, which is passed to the northward, is on the northern end of Nova's Rock, a very dangerous rock, lying on the southern side of this channel, bare at lowest tides, and bearing from the northernmost of The Virgin's Breasts **W.**, distant five-eighths of a mile, and from Kelly's Point (eastern extremity) about **S. ½ W.**, distant a quarter of a mile. The buoy is marked No. 10, and placed in about eight feet water on the northern end of the ledge,—the channel leading between it and a black spar-buoy, lying between fifty and sixty yards to the northward, on *Emm's Rock*. This is a detached rock, with about a foot and a half water at lowest tides, lying about three hundred yards **S.** by **W. ½ W.** from the eastern extremity of Kelly's Point. The buoy is marked No. 7, and placed in seven feet water on the southern end of the ledge. As the channel between this rock and Nova's Rock is extremely narrow, great care must be exercised in passing through it. Seven and a half feet may be taken through between these buoys at mean low water, but the channel with this depth is very narrow, and as a rule, it is not safe to calculate upon more than six feet across the bar. ***Nova's Rock.***

Passing Emm's Rock buoy, the course leads towards a black spar-buoy about a quarter of a mile to the westward, passing to the northward of a red buoy on Little Ledge, a bad ledge in the Deep-Water Channel leading into Seguin Passage from the northward. It is an eighth of a mile **W. ¼ S.** from Emm's Rock, has a foot and a half on it at low water, and is marked by a red spar-buoy (No. 8) placed on its northeastern end. Passing it, a black spar-buoy will be seen to the northwestward, about two hundred yards off. This marks *Moos-a-bec Bar*, which makes out from the northern shore just to the westward of Kelly's Point, and is dry at lowest tides. The buoy is placed on its southeastern end in eight feet, is marked No. 5, and the channel passes to the southward of it. ***Little Ledge.***

When abreast of this buoy a red spar-buoy (No. 6) will be seen ahead, bearing about **W.**, and about three-eighths of a mile off. This is on Sand Ledge, bare at half-tide, and lying on the southern side of the channel, about three hundred yards from the northern shore. In steering so as to pass to the northward of it, you also pass about two hundred yards to the northward of a wooden spindle surmounted by a cask and painted red. This is on *Snow's Rock*, also on the southern side of the channel, and about four hundred yards **W. ¼ N.** from the buoy on Little Ledge, and a quarter of a mile **E SE.** from Sand Ledge. The spindle is on the dry part of the ledge, which is near the northern end. ***Sand Ledge.***

When abreast of the red buoy on Sand Ledge there will be seen, about six hundred yards ahead, another red spar-buoy. This is on the northern end of Horse Ledge, which lies a little over a quarter of a mile **S SE.** from the eastern point of entrance to Sawyer's Cove, and about **W.** by

Horse Ledge. N. ¾ N. from the red buoy on Sand Ledge, and is bare at low water. The buoy, which is marked No. 4, is usually left to the southward; but it may be left to the northward by giving it a berth of about two hundred and fifty yards,—passing through a narrow but deep channel, which has another dry ledge on its southern side. The best way, however, is to the northward of the buoy, as shoal water extends to the southward from it about an eighth of a mile.

The water is all shoal from the bare rock on the southern side of Horse Ledge to Pig Island; but the channel becomes wider after passing that ledge; and between Sawyer's Cove and French-House Island it is nearly half a mile wide.

In beating, the main shore may be approached within from one hundred and fifty yards to an eighth of a mile, between Horse Ledge and Cummings' Ledge, (about a mile to the westward,) with not less than twenty-one feet water. But on the southern side you must give French-House Island a berth of at least four hundred yards, *as long ledges make out from it to a distance of three hundred and fifty yards.* In fact, all of the area between Pig and French-House islands is full of ledges and shoals.

The northern shore of Beal's Island may not be approached nearer than an eighth of a mile if you wish to keep in over three fathoms water. The shoals are abrupt throughout nearly the whole length of the reach, so that it is necessary to be careful in approaching either shore.

Cummings' Ledge. Cummings' Ledge is the next ledge to the westward after passing Horse Ledge, and makes off from the Jonesport shore a little over half a mile to the westward of Old House Point, which separates Sawyer's Cove from Sawyer's Creek. The shoal of the ledge has three feet at mean low water, and is about two hundred yards from shore; but the buoy, which is a black spar, marked No. 3, is placed on the southern side of the ledge in sixteen feet water and an eighth of a mile from shore. The sailing-line passes to the southward of it.

After passing Cummings' Ledge, vessels in beating must give the northern shore a berth of about three hundred yards, and not approach the southern side of the reach so near as the line between the northern ends of Beal's and Pomp's islands, as the whole space between these islands and Norton's and the Sheep Islands is full of ledges, many of which are dry at low water. Not less than three fathoms will be found within the above limits.

Several small shoals, with from thirteen to fifteen and sixteen feet at mean low water, lie almost exactly in the middle of the passage between Doyle's and Pomp's islands, but are not dangerous, except to vessels of large draught and in heavy weather. These ledges lie in a line nearly **E.** and **W.**, and three-eighths of a mile long; and the best water is to the southward of them, although three and three-quarter fathoms can be carried between them and Doyle's Island.

After passing these ledges a tall spindle, painted black and surmounted by a round cage, will be seen ahead, bearing about **W.** by **N.**, and apparently off the northern end of Hardwood Island.

Fessenden's Ledge. This is on the dry part of Fessenden's Ledge, a large ledge, lying midway between the southernmost of the Goose and Hardwood islands, extending **E.** and **W.**, about two hundred and fifty yards wide, three hundred and fifty yards long between the lines of three fathoms, and bare at low water near the spindle. Soundings of six, ten and thirteen feet are found on other parts of the ledge. The spindle bears from the southernmost Goose Island **S.**, four hundred yards, and from Shabbit Island **E NE.**, one mile distant, and is to be left to the northward.

The northern end of Hardwood Island must receive a berth of two hundred yards, and the northwestern shore of the same island a berth of at least an eighth of a mile, *as there are bad ledges lying off those points,* some of which are dry at low water, and one is always bare. The channel is here very narrow, being only an eighth of a mile wide from Fessenden's Ledge spindle over to the shoals off Hardwood Island; but after passing this island it widens out to the northward and westward, and affords an excellent beating channel with from four to nine fathoms in it.

When to the westward of Fessenden's Ledge, look out, on the southern side of the channel, *for the shoals north of the Duck Ledges.* These consist of a number of dangerous rocks, most of which are bare at low water, and extend to the northward from the white, rocky islet, with the tuft of grass on top, which forms the northernmost of the Duck Ledges. From this islet to the southern edge of the channel the length of the line of shoals is nearly three-eighths of a mile and its direction about **NE.** This mass of ledges is nearly six hundred yards wide at its northern end; and, in fact, shoal soundings extend clear to Shabbit Island, a distance of half a mile to the southwestward.

Shabbit Island should receive a berth of at least an eighth of a mile from vessels drawing over fifteen feet, and is to be left to the southward and eastward.

Bar Island, on the western side of the channel, and nearly opposite to Shabbit, should receive a berth to the westward of at least three hundred yards, *as dangerous shoals make off from it about an eighth of a mile.* The channel here is half a mile wide between the shoals, and has seven and nine fathoms in it.

Below Bar Island the eastern shore of Moose Neck is tolerably bold; but at the eastern entrance to Tabbott's Narrows the shoal water extends out about a quarter of a mile, surrounding Sheep Island.

Tabbott's Ledge. The first dangers met with will be seen, on approaching the Narrows, to be marked by two spar-buoys, one red and one black, placed **NW.** and **SE.** from each other and close together. The black buoy on the northern side of the channel is on Tabbott's Ledge, which has four feet at low water, and lies off Sheep Island, (formerly called **Tabbott's Island,**)—extending in an easterly direction from that island about an eighth of a mile.

The buoy is marked No. 1, placed in sixteen feet on the eastern end of the ledge, and is to be left to the northward.

Ram Island Ledge.

On the southern side of the channel, a little more than one hundred yards from the buoy on Tabbott's Ledge, lies a red spar-buoy. This is on Ram Island Ledge, which lies in the middle of the channel, and has nine feet at mean low water. It is a detached rock, with from five to eight fathoms water all around it, an eighth of a mile **NE.** from Ram Island, and about four hundred yards **E.** by **S.** from Sheep Island. The buoy is placed on its northern side, in good water, is marked No. 2, and is to be left to the southward.

The channel becomes very wide after passing to the westward of the Narrows, and has in it from eight to ten fathoms; but the northern shore must not be approached too closely until past Cape Split Harbor, *as there are ledges extending from it to the southward about three hundred and fifty yards.* This shore should, therefore, receive a berth of a quarter of a mile from vessels drawing over fifteen feet. Cape Split is, however, tolerably bold-to, and on its western side is quite so,—eight fathoms being found within a hundred yards.

When up with Cape Split, look out for Norton's Ledge, whose southern end will be seen about three-quarters of a mile to the westward, marked by an iron tripod and spindle thirty-five feet high, with ball on top, painted black. It must be left to the northward by vessels bound along the coast; but those intending to enter Pleasant Bay may pass to the northward of the ledge by keeping close to Cape Split. Norton's Ledge is a long shoal making off from Norton's Island in a southwesterly direction, and is for the most part bare at half ebb. **Norton's Island** is a barren, rocky island, of moderate height, and lies in the entrance to Pleasant Bay. A good channel exists between it and Cape Split. After passing this ledge, the course leads towards Petit Manan Island, and you are clear of the reach; but it is necessary to look out for Tibbetts' Rock, a detached shoal with fifteen feet at mean low water, and a reported depth of four feet at low tides near it. It is bold-to on its northeastern side,—the water deepening to sixteen fathoms within twenty yards of the shoal. It is less abrupt on its southern and southwestern sides; but a depth of twenty fathoms is found within half a mile of it. This rock bears from

Norton's Ledge.

Tibbetts' Rock.

	Miles.
Petit Manan Light-house, E. ¼ N.	3½
Nash's Island Light-house, SW. ⅜ S.	5
Southeast Rock, NE. ⅜ N.	3½

The course for Petit Manan Island from the western entrance to Moos-a-bec Reach passes about two miles to the northwestward of this rock.

The buoys in Moos-a-bec Reach are colored and numbered as for vessels bound through from the westward; but they should be, for consistency's sake, colored and numbered from the eastward. Navigators must bear this peculiarity in mind; and, when coming into this reach from the eastward, must leave red buoys to port and black buoys to starboard.

SAILING DIRECTIONS

FOR APPROACHING AND PASSING THROUGH MOOS-A-BEC REACH.

I. ***Coming from the Eastward, across Moos-a-bec Bar.***—When the middle of Mark Island bears **W. ½ S.**, distant two miles and a quarter, and you are in eighteen fathoms, steer **W.**, which course leads safely past the island with not less than seven fathoms water, and up with the black buoy on Emm's Rock, and the red buoy on Nova's Rock, carrying not less than fifteen feet. Continue this course until up with the black buoy on the bar, which pass in seven feet water; and, when abreast of this, steer **W.** by **N. ⅜ N.** until abreast of the red buoy on Horse Ledge, carrying not less than fifteen feet. Pass to the northward of this buoy, and steer **W. ¼ N.** through the reach, which course leads safely through the main channel between Fessenden's Ledge and Hardwood Island with not less than twenty-one feet water. Continue it until the white, rocky islet which forms the northernmost of the Duck Ledges bears **S. ¼ E.** and Ram Island **SW. ¾ W.**, with five fathoms water, when **SW.** by **W.** will lead safely through Tabbott's Narrows with from five to nine fathoms water. As soon as the western end of Sheep Island bears **NW.** by **N.**, with five fathoms water, steer **W. ½ N.**, which will clear Norton's Ledge in not less than eight fathoms; after which the course may be shaped for Petit Manan or Pond Island.

The above courses pass half a mile to the northward of Eastern Ledges; three hundred and fifty yards to the southward of the buoy on the Bay Ledges; one hundred yards to the northward of Gilchrist's Rock; one hundred yards to the northward of The Virgin's Breasts; to the southward of the black buoy on Emm's Rock and close to it; to the northward of the red buoy on Nova's Rock and close to it; one hundred yards to the southward of the black buoy on Moos-a-bec Bar; one hun-

Sailing Directions--Moos-a-bec Reach. dred and twenty-five yards to the northward of the red spindle on Snow's Rock; one hundred and twenty-five yards to the northward of the red buoy on Sand Ledge; to the northward of and close to the buoy on Horse Ledge; about one hundred yards to the southward of Cummings' Ledge; an eighth of a mile to the southward of the shoal spots to the southward of Doyle's Island; one hundred yards to the southward of Fessenden's Ledge; two hundred and fifty yards to the westward of Shabbit Island; midway between the buoys on Tabbott's and Ram Island ledges; and three-eighths of a mile to the southward of the spindle on Norton's Ledge.

Or, intending to pass between The Ladle and Cone Island.—Continue the course **SW.** by **W.** for the western end of Cone Island, and when within half a mile, and in from ten to eleven fathoms water, with The Ladle bearing **N NW.**, steer **W.** $\frac{3}{4}$ **N.** through the middle of the passage, which is here over a thousand yards wide. This course will carry not less than nine fathoms water. In beating to windward do not approach The Ladle nearer than two hundred and fifty yards, and give the northern shore of Cone Island a berth of an eighth of a mile, within which limits there will be over three fathoms at mean low water. Seven feet at low water can be carried over the bar at the eastern end of the reach; and the least water in the channel, after passing the bar, is fifteen feet. Through the Narrows from six to nine fathoms may be taken, and thence to Cape Split from eight to ten fathoms. Between The Ladle and Norton's Island there is not less than eight fathoms, and between The Ladle and Cone Island from eight to eleven fathoms. To the southward of Cone Island the ground is somewhat broken, and the depths range all the way from five to twenty-one fathoms. In the deeper channels the bottom is soft,—the shoals being almost all rocky.

DANGERS

IN APPROACHING AND PASSING THROUGH MOOS-A-BEC REACH.

II. ***From the Eastward, by the Seguin Passage.***—This passage, which, owing to its windings, is mostly used by steamers, enters from the eastward, between Mark Island on the north and Seguin Island on the south. The least water in it is eleven feet, (just beyond Channel Rock,)—but it is full of ledges, which render the navigation difficult, though all dangers are marked by buoys. With a wind anywhere between **E NE.** and **S SW.** a sailing-vessel may safely enter and run this channel from the eastward; and with the wind from **W SW.** around to **N.** she may enter and run it from the westward.

The **Deep-Water Passage**, which leads into the Seguin Passage, from the northern or main channel, between Little Ledge and Nova's Rock, has not less than four fathoms in it, and is often used by coastwise steamers. Not less than fifteen feet at low water may safely be taken from the anchorage at Jonesport through this and the Seguin Passage.

All approaches to the reach from the eastward are equally obstructed by the Eastern Ledges, (already described on pages 60–61.) These are two dangerous rocks, lying **E NE.** and **W SW.** from each other, with good water between them. They bear from Spruce Island Gut **S.**, one mile and three-eighths distant; from Seguin Island **E.** by **N.** $\frac{1}{2}$ **N.**, one mile and a half distant; and from Mark Island **E.** by **S.** $\frac{1}{2}$ **S.**, one mile and an eighth distant. The easternmost ledge, which is dry at low water, is about three hundred yards to the eastward of the western rock, and both are bold-to. The channels between these ledges and the Spruce Islands, Mark, Seguin and Head Harbor islands are wide, having from fifteen to twenty fathoms water, and are entirely unobstructed. Eastern Ledges are not marked in any way, but may be left on either hand in approaching Moos-a-bec Reach.

Eastern Ledges.

On approaching Seguin Passage from the eastward the first danger met with is Seguin Ledge, marked by a red spar-buoy, which will be seen lying to the northward of Seguin Island, with a black spar-buoy a little to the westward. Seguin Ledge lies an eighth of a mile **NE.** $\frac{1}{2}$ **N.** from the northern end of Seguin Island; from the middle of Mark Island **S.** by **W.**, distant a little less than half a mile; and from the dry rock of Eastern Ledges **W.** $\frac{3}{4}$ **S.**, one mile and five-eighths distant. It has three feet at mean low water, and is marked by a red buoy (No. 4) placed on its northern end in five fathoms water. It must be left to the southward.

Seguin Ledge.

The black buoy seen about two hundred and fifty yards to the westward of Seguin Ledge buoy is on Gangway Ledge, which has ten feet at mean low water, bears **W NW.** from Seguin Ledge, and is on the western side of the channel. From Seguin Island it bears **N.** $\frac{1}{4}$ **W.**, distant three hundred and fifty yards. There is a good channel to the northward, and between it and the Drisco Ledges, with not less than four fathoms, if a berth of one hundred and twenty-five yards is given the buoy; but the custom is to pass to the southward of it. The black buoy is marked No. 5, and placed on the southern side of the ledge, in eighteen feet water.

Gangway Ledge.

In steering so as to pass between the red buoy on Seguin Ledge and the black buoy on Gangway Ledge, you will head nearly for a red spindle with a ball-shaped cage on top, appearing off the northwestern end of Seguin Island. This is on Moose Rock, a detached rock, covered at high water, lying on the southern side of the channel, about three hundred yards NW. ¼ W. from Seguin Island; a quarter of a mile W. ¼ S. from Seguin Ledge; and an eighth of a mile SW. by W. ½ W. from Gangway Ledge. The spindle is supported by an iron tripod, and the whole structure is thirty-five feet high. It is to be left to the southward, although there is a good channel between it and Seguin Island. ***Moose Rock.***

When abreast of the spindle on Moose Rock, a black spar-buoy will be seen bearing about NW. and about two hundred and fifty yards off. This is on the Drisco Ledges, two detached rocks lying N. by W. and S. by E. from each other, separated by a deep passage about one hundred yards wide. The northern one, bare at low water, lies about an eighth of a mile to the northward of the buoy, which is placed on the southern side of the southern rock. The southern rock has five feet at mean low water, and bears from Mark Island Point SW. by W. ¾ W., five-eighths of a mile; from Gangway Ledge W. by N. ¾ N., a quarter of a mile; and from Moose Rock spindle NW. ⅝ N., about three hundred and fifty yards distant. The northern rock bears from Mark Island Point W. by S. ½ S., five-eighths of a mile; from Gangway Ledge NW. by W., nearly three-eighths of a mile; and from Moose Rock spindle NW. by N. ¼ N., about six hundred yards distant. The buoy is black, marked No. 3, placed in eighteen feet to the southward of the ledge, and vessels must pass to the southward of it. ***Drisco Ledges.***

Directly opposite to it, on the south side of the channel, will be seen the red spar buoy (No. 2) on Sawyer's Ledge, which has two feet at lowest tides, and lies two hundred and fifty yards W. ¼ S. from Moose Rock and one-eighth of a mile S. by W. ¼ W. from the buoy on Drisco Ledges. The channel passes between this and the Drisco Ledges and is here an eighth of a mile wide. When between the two, a black spar-buoy will be seen about three-eighths of a mile to the northwestward. This is on Long Ledge, lying on the north side of the channel, and extending in a nearly E. and W. direction about two hundred yards. The western end of the ledge, off which the buoy is placed, is out at one-quarter ebb, bears from the northernmost of the Drisco Ledges W. ½ N., distant a quarter of a mile, and from the buoy on the southern end of those ledges W NW., nearly three-eighths of a mile. There is from three to five fathoms among all these rocks, but it is not safe for a stranger to attempt to pass among them. The eastern end of Long Ledge is awash at low water. The buoy, which is marked No. 1, must be left to the northward; and, after passing it, the course leads towards Channel Rock. On this course, when approaching Little Sheep Island give it a berth of at least an eighth of a mile, as there are *a great many shoal spots to the northward and eastward of it.* ***Sawyer's Ledge.*** ***Long Ledge.***

The black spar-buoy seen on the northern side of the channel about a quarter of a mile to the northeastward of Little Sheep Island is on the southern end of Southwest Ledge,—the name given to the shoal ground to the southward of Nova's Rock,—on which there is nine feet at low water. The buoy is marked No. 3, placed in fourteen feet, and bears from the black buoy on Long Ledge NW. by W. ½ W., distant a little over half a mile, and from the middle of Little Sheep Island NE. by E., distant about a quarter of a mile. The channel passes to the southward of it notwithstanding its color. ***Southwest Ledge.***

When abreast of Southwest Ledge buoy two spar-buoys will be seen nearly ahead and from a quarter to three-eighths of a mile off. The nearer of the two, which is black, is on the southern end of Little Ledge; and the other, which is red, is on Channel Rock. The sailing-line passes between them.

Little Ledge, as before described, has a foot and a half on it at low water, and lies between Seguin Passage and Deep Water Channel,—forming the eastern part of that extensive area of shoal ground of which Snow's Rock forms the western extremity. There are two large bare rocks on the southern side of this ledge, and a spit bare at low water makes from them in a southeasterly direction for about one hundred and fifty yards. It is upon the end of this spit that the buoy (No. 1) is placed, in sixteen feet water;—Channel Rock buoy bearing W. by N. ½ N., about two hundred yards, and Snow's Rock spindle NW., by N. ⅝ N., about four hundred yards distant. ***Little Ledge.***

Channel Rock, on which is the red buoy, (No. 2,) has six feet at low water, lies nearly in mid-channel, but on the south side, bearing W NW. from Long Ledge buoy, distant seven-eighths of a mile, and NE. ¾ E. from the eastern end of Pig Island, distant a little over six hundred yards. The buoy is placed on the eastern end of the rock, in about two fathoms, and must be left to the westward. When abreast of it care must be taken to avoid the southern end of Snow's Rock, which has nine feet at low water, and lies on the north side of the channel, nearly opposite to Channel Rock. Snow's Rock extends N. and S., between the Seguin Passage and the Northern Channel; and its northern end, which is dry at low water, is marked by an iron spindle with cage on top, painted red. In passing through the Seguin Passage this spindle must receive a berth of not less than one-eighth of a mile. ***Channel Rock.*** ***Snow's Rock.***

The course now continues to the northwestward, past Snow's Rock; and a quarter of a mile off will be seen another red buoy. This is on the northeastern side of Sand Ledge, bare at half-tide, and lying on the south side of the main or northern channel, and on the west side of the Seguin Passage, at their point of union. The course to join the northern channel turns to the north-

Sand Ledge. ward so as to leave this buoy (No. 4) to the westward. Sand Ledge bears from Channel Rock **NW. ⅛ W.**, distant nearly three-eighths of a mile, and from the spindle on Snow's Rock **W.** by **N. ½ N.**, distant a quarter of a mile. The channel passes between it and the latter, but the best water (fifteen feet) is nearest to Sand Ledge buoy. When past this ledge, you enter the main channel and must shape your course for the red buoy on Horse Ledge. (See pages 68–69 for dangers in the northern channel.)

Bound through the Deep-Water Passage.—When within a quarter of a mile of Channel Rock buoy, turn abruptly to the northward and steer nearly for the wharf on the south shore of Kelly's Point. On this course there will be seen to the northeastward, and about three hundred and fifty yards off, a black spar-buoy, and to the northwestward, about a quarter of a mile off, a red

Southern end of Nova's Rock. spar-buoy. The former is on the southern end of Nova's Rock, which lies in a **N NE.** and **S SW.** direction and is about three hundred yards long, and bare at low spring-tides. Its northern end, marked by a red spar-buoy, is on the south side of the bar channel, and its southern end is on the north side of the Deep-Water Passage. The buoy on this end is marked No. 1, bears from the eastern extremity of Kelly's Point **S SW.**, about six hundred yards distant, and from Little Sheep Island **NE.** by **N. ½ N.**, nearly three-eighths of a mile. It is placed in eighteen feet water.

The red buoy to the northwestward is on Little Ledge, which lies on the western side of the channel, about three hundred yards from the black buoy on Nova's Rock, and has a

Little Ledge. foot and a half on it at low water. It bears from the eastern extremity of Kelly's Point **SW. ½ S.**, distant a little over a quarter of a mile. The buoy, which is marked No. 2, is on the north end of the ledge, in two fathoms, and is to be left to the westward. When past this buoy you enter the northern channel, and the course leads to the westward to clear the black buoy on the bar and the red buoy on Sand Ledge.

SAILING DIRECTIONS

FOR APPROACHING AND PASSING THROUGH MOOS-A-BEC REACH.

II. ***From the Eastward, by the Seguin Passage.***—Vessels using this passage pass to the southward of Mark Island; and, with the middle of that island bearing **NW.** by **W. ½ W.**, distant nearly four miles, and the north end of Seguin Island bearing **W. ¾ N.**, distant four miles, steer **W NW.**, carrying not less than thirteen fathoms, until the eastern end of Mark Island bears **N.** by **W.**, and you have ten fathoms. Thence the course is **W.** by **S. ½ S. Nearly**, for the spindle on Moose Rock, which course leads between the black buoy on Gangway Ledge and the red buoy on Seguin Ledge with not less than six fathoms water. When abreast of the former, in from three to four fathoms, the course changes to **W.** by **N.**, passing to the northward of the spindle on Moose Rock. This course leads safely between the Drisco Ledges and Sawyer's Rock with not less than three and a half fathoms, and must be continued for nearly three-eighths of a mile, or until the southernmost of The Virgin's Breasts bears **N.** by **W. ½ W.**, with five fathoms water; when **NW.** by **W. ½ W.** will lead up the middle of the channel to Channel Rock with not less than thirteen feet. Passing to the northward of Channel Rock buoy, the course must be continued until the eastern end of Pig Island bears **SW.** by **S. ¾ S.** and is a little more than a quarter of a mile distant. On this course there will be eleven feet. Now turn abruptly to the northward and steer **N. ¼ W.**, passing to the westward of the red spindle on the northern end of Snow's Rock and to the eastward of the red buoy on Sand Ledge. This course leads into the northern channel with not less than fifteen feet water. Continue it until within two hundred yards of the northern shore, when steer **W.** by **N. ⅜ N.** to clear the red buoy on Horse Ledge, carrying not less than twelve feet water. When past Horse Ledge, follow the directions given for the main channel.

III. ***To enter by the Seguin Passage and pass through the Deep-Water Passage into the northern channel.***—When, on the course **NW.** by **W. ½ W.** for Channel Rock buoy, you are within a quarter of a mile of the buoy, with Little Sheep Island bearing **SW. ½ S.**, two hundred and fifty yards distant, and a depth of twenty-eight feet water, steer **N. ½ E. Nearly**, for the wharf on the south side of Kelly's Point. This course leads safely through between Nova's Rock and Little Ledge, passing to the westward of the former and to the eastward of the latter, and carrying not less than

four fathoms. When past Little Ledge buoy you are in the northern channel, and must steer **W.** by **N.** $\frac{3}{8}$ **N.** for Horse Ledge buoy. On this course there will be nothing less than fifteen feet. When up with Horse Ledge, follow the directions for the main channel through the reach.

DANGERS

IN APPROACHING AND PASSING THROUGH MOOS-A-BEC REACH.

III. ***From the Eastward, by the passage between The Virgin's Breasts and Long Ledge.***— This passage is an excellent channel for entering Moos-a-bec Reach from the eastward, and is superior to the Seguin Passage; but it is not buoyed. The entrance to it is just to the northward of that leading into the Seguin Passage, and there is not less than six fathoms in it until it joins the latter near Channel Rock. This channel passes to the northward of all the ledges of the Seguin Passage, and between Long Ledge and The Virgin's Breasts, but should not be used by strangers unless with a fair wind.

There are no ledges in the middle of this passage,—the dangers lying on both sides. The first of these met with, after passing the Eastern Ledges, is Seguin Ledge, which lies nearly a quarter of a mile to the southward of the sailing-lines and has a red spar-buoy on its northern end.

Seguin Ledge. Seguin Ledge is an eighth of a mile **NE.** $\frac{1}{2}$ **N.** from the north end of Seguin Island; from the middle of Mark Island **S.** by **W.**, a little less than half a mile distant; and from the dry rock on the Eastern Ledges **W.** $\frac{3}{4}$ **S.**, a mile and five-eighths distant. It has three feet at mean low water, and must be left well to the southward.

Gangway Ledge. Gangway Ledge will next be passed, lying on the south side of this channel, and marked by *a black spar-buoy, placed on its southern side,* as a guide to Seguin Passage. This buoy must therefore receive a berth of not less than two hundred yards from vessels using the northern passage, as the ledge lies between them and it. Gangway Ledge has ten feet at mean low water; lies **W NW.** from Seguin Ledge, about two hundred and fifty yards distant, and from Seguin Island **N.** $\frac{1}{4}$ **W.**, three hundred and fifty yards distant.

Drisco Ledges. Next to the westward of the Gangway, and a little over a quarter of a mile from it, will be seen the black spar-buoy on the southernmost of the Drisco Ledges, which are also in the Seguin Passage. From the buoy the ledges extend to the northward about three hundred and fifty yards; and the northernmost, which is bare at low water, and not buoyed, is a dangerous obstruction to the channel now being described. From Mark Island Point it bears **W.** by **S.** $\frac{1}{2}$ **S.**, five-eighths of a mile; from Gangway Ledge **NW.** by **W.**, nearly three-eighths of a mile; and from the southernmost of The Virgin's Breasts **SE.** $\frac{3}{4}$ **S.**, a little over three-eighths of a mile distant. When abreast of it, and heading to the westward, a black buoy will be seen to the southward of the course, about three-eighths of a mile distant. This is on the southern end of Long Ledge, and is also placed as a guide to the Seguin Passage. Long Ledge extends nearly **E.** and **W.**, and is about two hundred yards long. The buoy is on its southern side, near its western end, and bears from the southernmost of The Virgin's Breasts nearly **S.**, about six hundred yards distant. As the ledge lies between this buoy and the channel, it must receive a berth to the southward of not less than two hundred yards. After passing it the course continues to the westward, and this channel unites with the Seguin Passage at its point of union with the Deep-Water Passage.

Long Ledge.

SAILING DIRECTIONS

FOR APPROACHING AND PASSING THROUGH MOOS-A-BEC REACH.

IV. ***From the Eastward, by the passage between The Virgin's Breasts and Long Ledge.***— When the middle of Mark Island bears **NW.** by **W.** $\frac{1}{2}$ **W.**, four miles distant, and the northern end of Seguin Island **W.** $\frac{3}{4}$ **N.**, also four miles distant, steer **W NW.**, carrying not less than thirteen fathoms, until the eastern end of Mark Island bears **N.** by **W.**, and you have ten and a half fathoms, soft bottom. Then steer **W.** by **N.** through this channel and into the Seguin Passage. On these courses the least water will be four fathoms. When within a quarter of a mile of Channel Rock buoy, in four and three-quarter fathoms, with Little Sheep Island bearing **SW.** $\frac{1}{2}$ **S.**, about two hundred and fifty yards off, steer **NW.** by **W.** $\frac{1}{2}$ **W.** to pass through the Seguin Passage, or **N.** $\frac{1}{2}$ **E.** through the Deep-Water Passage; after which follow the directions previously given.

There is a narrow passage, with ten feet at low water, between Seguin Island and Head Harbor Island, but it is entirely unfit for strangers.

FISHERMAN'S ISLAND PASSAGE.

Through and among the numerous islands lying on the southern side of Moos-a-bec Reach lead several wide and good channels, which may be used by vessels in case of necessity. They are not buoyed, however, and great care is required to avoid the numerous ledges which obstruct them. Fisherman's Island Passage, the easternmost of these channels, leads between Crumple, Fisherman's, Browney, Ram and Norton's islands on the east, and Outer Sand, Inner Sand, Drisco and Stevens' islands and the Duck Ledges, on the west. It is in most places quite wide, and has not less than five and a half fathoms throughout its length until you come abreast of Hardwood Island, where a few soundings of sixteen feet will be found. From the entrance to the point at which it unites with the main channel of the reach this passage is exactly five miles long, and affords good beating-room through most of its length; and on this account it is particularly desirable that the ledges in it should be buoyed. Such action has been recommended.

A stranger wishing to enter this passage may easily recognize it by the appearance of Crumple and Fisherman's islands.

Crumple Island. The former looks like a number of round hillocks of various heights joining each other,—the central hillock being the highest, with one or two tall trees on its slopes. Next to this, to the southwestward, two tall, leaning trees are seen, forming a very conspicuous mark; and near the eastern end of the island rises a small hill with a peculiar-looking clump of trees on its summit. Crumple Island lies three-quarters of a mile **SW.** from the southern end of Great Wass Island.

Fisherman's Island. Fisherman's Island, which lies just to the northward of Crumple Island, is a low, rocky island, of a peculiarly barren and desolate appearance, dotted with many tall, dead trees, which, when seen from the northwestward, with this island and Crumple Island in range, look like masts of shipping. There is no safe passage between these islands and Great Wass,—the channel being narrow, shallow and full of ledges.

Browney Island. About half a mile to the northward of Fisherman's Island will be seen Browney Island, thickly wooded in the middle, with tall trees projecting here and there above the general line of woods. Its western end is low, rocky and bare, with the exception of numerous dead trees,—while its northeastern end is a high, bare, rocky head, sloping gently to the water, and the southeastern end is low and covered with bushes and dead trees.

Sand Islands. On the western side of the entrance, nearly opposite to Browney Island, will be seen **Outer Sand Island,** high and grassy, with a scanty growth of spruce and fir. There are many dead trees, like spars, standing at intervals over its surface. **Inner Sand Island** will be seen to the northward of Outer Sand, about eight hundred yards from it. It is rocky, of considerable height, and thinly wooded with small spruce and pine trees. There is no passage between the two Sand Islands.

Drisco Island. Just to the northward of Inner Sand will be seen Drisco Island, one of the largest islands of this group. It lies **NE.** and **SW.**, and is a little over half a mile long. It will appear thickly wooded, with here and there tall trees above the general outline of woods. These three islands, (Outer Sand, Inner Sand and Drisco,) if viewed from the entrance, and in mid-channel, will appear nearly in range, or with their ends overlapping;—but the above description will enable any one to recognize them.

There is a good passage between Inner Sand and Drisco islands, with not less than seven fathoms, but it is obstructed by a bare ledge at its eastern entrance.

Little Drisco Island lies off the northern end of Drisco and about two hundred yards to the eastward; and is rocky and thickly wooded. There is a good passage between the two islands, with not less than four fathoms.

Stevens' Island. Stevens' Island lies about six hundred yards to the northward of Little Drisco, extends **E NE.** and **W SW.**, and is about three-eighths of a mile long. It is of moderate height, rocky and mostly bare, although a few tall dead trees stand here and there. About one-third of the way from the eastern to the western end a group of four or five spruce and fir trees will appear, and serve as a sufficient distinguishing mark for this island. It is surrounded by shoals.

Immediately opposite to Stevens' Island, bearing about **E.**, and almost exactly in the middle of the channel, will be seen a high, bare rock, called **Sea-Duck Rock.** There are from nine to twelve fathoms on all sides of it, but it is boldest on its western side. On its eastern side the channel is the widest, however, and has the deepest water. Sea-Duck Rock is a little over half a mile **E.** from Stevens' Island.

Ram Islands. Three-quarters of a mile to the eastward of Sea-Duck Rock are the Ram Islands, which lie on the eastern side of Fisherman's Island Passage, and are three in number. They extend **N NE.** and **S SW.**, and are three-quarters of a mile in length over all. The two southern ones are joined at low water and form what is called **Great Ram Island,** which is of moderate height and well wooded. The northernmost of the group, called **Little Ram Island,** is small and rocky, with a bushy clump of black-looking trees at its northwestern end and several small clumps dotting its surface, while the rest of the island is thinly wooded with small fir trees. The Ram Islands are a mile and a half to the northward of Browney Island; and Little Ram Island is about six hundred yards **SE.** from Norton's Island.

There is a narrow passage, with fourteen feet water, between Little Ram and Great Ram islands, and also good water (from three to four fathoms) between Little Ram and Beal's islands; but strangers should not attempt either passage. Good anchorage may be had between the Ram Islands and Great Wass Island, either on the northern side of Slate Island, in from three to six fathoms, soft bottom; in **Slate Cove,** in from twelve to fifteen feet; in **Cummings' Cove,** (on the western shore of Great Wass

Island,) in from two to three fathoms; or in **The Flying Place,** (which separates Great Wass and Beal's islands,) where there will be from two to four fathoms, soft bottom.

The western shore of **Great Wass Island** is rocky, barren, for the most part thickly wooded, thinly settled and very little cultivated. Slate Island lies off its western shore at a distance of two hundred and fifty yards,—a dry reef connecting the two at low water. The island is about seven hundred and fifty yards **E.** by **S.** ½ **S.** from the southern end of Great Ram Island. It is low and rocky, and dotted here and there with clumps of spruce and single trees; and a hut stands on its western end. The island is surrounded by shoals, and must receive a berth to the eastward of two hundred and fifty yards. On its northern side is good anchorage in from three to six fathoms, sheltered from all winds. **Slate Island.**

Norton's Island, lying six hundred yards **NW.** by **N.** from the Ram Islands, is the largest of the group sometimes called the **Sheep Islands.** It extends three-quarters of a mile **NE.** and **SW.,** with low shores, composed of yellow, weather-beaten rocks; and is covered with a thick but scrubby growth of trees. Ledges surround this island, especially on its southern side, where shoal water extends to a distance of nearly half a mile. **Norton's Island.**

Pomp's Island, lying close in with the northwestern shore of Norton's Island, is joined to it at low water. It lies **NE.** and **SW.,** is nearly half a mile long, low, rocky and almost bare. Its northeastern end has a somewhat bluff appearance, and has small clumps of stunted fir. This island was formerly thickly wooded, but the stumps of the trees alone remain.

Due **W.** from Pomp's Island, and a little over half a mile distant, lies Hardwood Island; with a good channel between the two, by which vessels entering from the southward may pass into the reach. This island lies **N NE.** and **S SW.,** and is a quarter of a mile long. Seen from the southward and westward, its southern end shows a remarkable white, rocky point, almost bare; and both ends of the island appear to be covered with small trees. *A bad ledge, with seven feet at mean low water,* lies exactly in the middle of the passage between this and Pomp's Island. **Hardwood Island.**

Hardwood Island Ledge lies a quarter of a mile to the southeastward of Hardwood Island; and the **Norton's Island Ledges** extend three-eighths of a mile from the western shore of that island, thus diminishing the width of the channel to about an eighth of a mile. The passage, therefore, between Hardwood and Pomp's islands is not recommended to strangers, as none of the ledges are buoyed. The best plan is to keep to the northward, leaving Hardwood Island to the eastward and the Duck Ledges to the westward.

The Duck Ledges are dangerous rocks, lying about five-eighths of a mile **W SW.** from Hardwood Island, and are uncovered at half-tide, with the exception of the northernmost, part of which is always bare and shows as a white, rocky islet with a sort of grass-cap on top. These ledges should receive a wide berth in every direction, unless you are passing along to the southward of them, where they are comparatively bold-to, the shoals not extending farther off than an eighth of a mile. They lie a little over half a mile to the northward of Stevens' Island, with a good and unobstructed passage, in which there is from three to seven fathoms, between them. **Duck Ledges.**

After passing Hardwood Island you enter the main channel of the reach, and may steer **E.** ½ **S.** to the anchorage off Jonesport, or come to anchor to the northwestward of Hardwood, in from three to five fathoms, soft bottom.

In Fisherman's Island Passage and the channel leading from it into Moos-a-bec Reach there are many good anchorages, but most of them are not available to strangers, owing to the absence of buoys on the ledges. Between the Ram Islands and Great Wass Island is, however, good anchorage, as mentioned on the preceding page, which can always be made in the daytime,—the channel being not less than half a mile wide and unobstructed. When past Slate Island, the best anchorage is under the reef which connects it with Great Wass, in from three to six fathoms, soft bottom; but anchorage may be made anywhere between the Ram Islands and Great Wass Island.

DANGERS

IN FISHERMAN'S ISLAND PASSAGE.

In approaching this entrance the first danger met with is *Sea-Horse Rock,* about a mile and a quarter to the westward of the southern end of Fisherman's Island, and bare at half-tide. About a quarter of a mile to the northeastward of it is Western Egg Rock, a large ledge, three-quarters of a mile to the westward of Fisherman's Island, bare at half-tide, and lying **N.** and **S.,** with a length of eight hundred yards. This ledge is not buoyed, nor is the Sea-Horse, and both are dangerous, especially at night. Western Egg Rock bears from Nash's Island Light-house **SE.** by **E.** ½ **E.,** nearly five miles distant, and from Browney Island **SW.** ½ **W.,** nearly one mile distant. ***Western Egg Rock.***

On the western side of the passage, one mile and a half from Western Egg Rock, lies a bare, rocky islet, called Stanley's Ledge. It is a little over a quarter of a mile **S.** from Outer Sand Island, with which it is connected by sunken reefs,—shoal water extending over three hundred yards to the southward from it, and to the eastward about two hundred and fifty yards. It is not buoyed. ***Stanley's Ledge.***

Off the western and northern sides of Browney Island, on the eastern side of the channel, lie the Browney Island Ledges, extending **N NE.** and **S SW.** nearly three-quarters of a mile, in some places

bare at half-tide, in others with from two to fifteen feet upon them, and not buoyed. Narrow threads of deep water separate the different ledges of the group from each other. The southernmost ledge is bare at low water, and shoal water extends off from it in a **SW.** direction nearly half a mile from the island. Their northern end bears **N.** by **W.** $\frac{1}{2}$ **W.** from the northwestern point of Browney Island, distant about eleven hundred yards. Vessels endeavoring to make an anchorage under the north shore of Slate Island should therefore give Browney Island a berth to the southward of seven-eighths of a mile. The south end of Browney Island Ledges is nearly half a mile **W.** by **S.** from the western end of that island. Vessels coming into this channel should not, therefore, approach Browney Island nearer than three-quarters of a mile.

Browney Island Ledges.

About six hundred yards **NE.** $\frac{3}{4}$ **E.** from the northern end of Browney Island Ledges lies a bare ledge, surrounded by shoal water. From the south end of Ram Island it bears **S.** by **E.** $\frac{3}{4}$ **E.**, five-eighths of a mile distant, and from Slate Island **SW.** $\frac{3}{4}$ **W.**, five-eighths of a mile. It is not buoyed, but, in day-time, is always visible. It is proposed to call this ledge The Old Bachelor.

The Old Bachelor.

The southern end of Ram Island should not be approached nearer than two hundred and fifty yards by vessels drawing over twelve feet.

On the western side of the channel, exactly opposite to the north end of Browney Island Ledges, there is a great mass of ledges and bare rocks, lying off Drisco and Sand islands, of which the most prominent is a rocky islet about twenty feet high, called Batson's Ledge, a little over three hundred and fifty yards long, and always bare. A ledge, bare at low water, lies on its western side, close to it; one, which is out at half-tide, lies a little less than a quarter of a mile to the northward; a kelp ledge, with eleven feet, lies an eighth of a mile to the eastward; and another, with nine feet, lies three-eighths of a mile **E.** by **S.** $\frac{1}{2}$ **S.** All of these are detached rocks, with deep water between them. Between Batson's Ledge and Sand Island there is not less than five fathoms at low water, and not less than seven fathoms in the passage between Drisco and Inner Sand islands, when passing to the northward of Batson's Ledge. None of these passages are, however, available for strangers. Such should aim to pass to the eastward of the nine-feet kelp ledge, to which the name of *Corn Ledge* has been given.

Batson's Ledge.

Sea-Duck Rock, already described, (page 74,) is the next danger met with in entering by this passage, and it is best to pass to the westward of it, as, although the channel is wider between it and the Ram Islands, there is danger in that passage from the extensive Norton's Island Ledges, which extend nearly half a mile from the southwestern end of Norton's Island. Also, a long ledge makes off from Sea-Duck Rock to the southeastward about three hundred and fifty yards, and is, in some places, dry at low water, while the western side of the rock is tolerably bold-to, and may be approached within one hundred yards with four fathoms water. Sea-Duck Rock bears from the southern end of Ram Island **NW.** by **W.**, distant a little over three-quarters of a mile; from the southern end of Stevens' Island **E.**, distant nearly five-eighths of a mile; and from Hardwood Island **S.** $\frac{1}{4}$ **E.**, distant one mile and a quarter.

Sea-Duck Rock.

Stevens' Island is shoal on its eastern side to a distance of about six hundred yards, and the ledges are bare in many places at low water. As none of these rocks are buoyed, great care must be taken to avoid them.

After passing Sea-Duck Rock, look out on the eastern side of the passage for Norton's Island Ledges, which will be recognized by a bare, rocky islet, lying about a quarter of a mile **SW.** from Norton's Island. Shoal water extends from this islet a quarter of a mile to the westward, but it is not buoyed. Still farther to the northward, and exactly opposite to Duck Ledges, will be seen another bare ledge, lying about three-eighths of a mile **N NW.** from the rocky islet above mentioned, and a little over a quarter of a mile from the Norton's Island shore, forming the northern end of the Norton's Island Ledges. There is no passage between it and the southern rock, but it is pretty bold-to on its western side. In beating and standing to the eastward in this vicinity care must be taken not to get into the pocket between the northern and southern rocks, as there is deep water between them, with no outlet.

Norton's Island Ledges.

Duck Ledges, lying on the west side of the passage, opposite to Norton's Island Ledges, are very dangerous rocks. Being nearly always bare, they are easily avoided; but are surrounded by a mass of ledges and sunken rocks, rendering a near approach to them in the highest degree dangerous. Shoal water makes to the northeastward from the larger ledges to a distance of three-eighths of a mile. In passing them through this channel the eastern ledge should receive a berth of about three hundred yards, and the northern ledge (that which is always out, and has the cap of grass upon it, see page 65) should not be approached nearer than three-eighths of a mile. This is the most dangerous as well as the narrowest part of the channel, and vessels which draw over twelve feet should not attempt to pass through unless the tide is up. *A bar with only seventeen feet* runs clear across the channel, from near the northern end of the rocks north of the Duck Ledges to Hardwood Island on the eastern side of the passage. As neither the Duck Ledges nor Hardwood Island Ledge is buoyed, it is exceedingly difficult to keep in the channel unless acquainted with the locality.

Duck Ledges.

Hardwood Island Ledge, lying on the eastern side of the channel, is bare at half-tide, and obstructs also the passage between Hardwood and Pomp's islands. The bare rock lies about four hundred yards **S.** ½ **E.** from the southern end of Hardwood Island, and shoal water extends from it almost to the shore. It is not buoyed. Vessels must not, when past this rock, approach too near the western shore of Hardwood Island, as shoal water is found an eighth of a mile from its northwestern end. Twelve feet at mean low water may be carried to within a little over one hundred yards of its southwestern end, but in passing it the rule is to edge away to the westward as soon as past the southern end of the island, and keep about four hundred yards from it. By so doing the bar will be crossed in seventeen feet,—the best water. ***Hardwood Island Ledge.***

After crossing the bar you enter the main channel; and, if bound to Jonesport, steer to the eastward, being careful to pass not less than two hundred and fifty yards to the northward and westward of Hardwood Island. In doing so you will pass to the southward of the black spindle with a spherical cage on top. This is on Fessenden's Ledge, a large ledge, lying south of the Goose Islands, about in the middle of the passage, (see page 68,) and bare at low water near the spindle. Soundings of thirteen and sixteen feet are found on other parts of the ledge. The spindle bears from the southernmost Goose Island **S.**, four hundred yards, and must be left to the northward. ***Fessenden's Ledge.***

After passing Fessenden's Ledge follow the directions for the main channel.

SAILING DIRECTIONS

FOR FISHERMAN'S ISLAND PASSAGE.

Bring Nash's Island Light-house to bear **NW.** ¼ **N.**, four miles and three-quarters distant, and the south end of Crumple Island **E.** by **N.** ¼ **N.**, about two miles and a half distant; when you will be about off the middle of the entrance and must steer **N NE.**, having the Ram Islands a little to the northeastward of the course. Continue this course, on which there will be nothing less than sixteen fathoms, until the northern end of Browney Island bears **E.** by **S.** ½ **S.**, and the white rocky point of Hardwood Island **N. Easterly**; when you will be in sixteen fathoms, soft bottom, and must steer **N.** ½ **W.**, passing to the westward of Sea-Duck Rock; to the eastward of Stevens' Island; to the westward of Norton's Island Ledges; and between the Duck Ledges and Hardwood Island. Continue this course until in the main channel, which will be entered about three hundred and fifty yards to the westward of Fessenden's Ledge. Bound to Jonesport, steer up towards the spindle on Fessenden's Ledge, to the southward of which you must pass, and when abreast of it steer **E.** ¼ **S.** for the anchorage.

On the **N.** ½ **W.** course, as above, there is not less than five fathoms until up with the bar between Duck Ledges and Hardwood Island, upon which there is seventeen feet; and after passing it there is not less than four fathoms to the anchorage.

The above courses pass nearly half a mile to the westward of Western Egg Rock; a little over half a mile to the westward of Browney Island Ledges; about seven-eighths of a mile to the eastward of Stanley's Ledge; a little over a quarter of a mile to the eastward of the ledges off Sand Island; about three hundred yards to the westward of Sea-Duck Rock; a little over a hundred yards to the eastward of the ledges off Stevens' Island; three-eighths of a mile to the westward of Norton's Island Ledges; a quarter of a mile to the eastward of the easternmost of the Duck Ledges; a quarter of a mile to the westward of Hardwood Island Ledge; about three hundred yards to the eastward of the ledges to the northwestward of Duck Ledges; and about an eighth of a mile to the westward of the shoal water off the northwestern end of Hardwood Island.

Wishing to anchor in the Anchorage north of Slate Island: When the northern end of Browney Island bears **E.** by **S.** ½ **S.**, and the southern point of Hardwood Island **N. Easterly**, as before, and in sixteen fathoms, soft bottom, steer **NE.**, which course will lead nearly midway between Ram and Slate islands. On this course there will be nothing less than eight fathoms. As soon as Slate Island bears **SE.**, (or, in other words, when it is exactly abeam,) steer **E.** by **S.** ⅜ **S.** towards the Great Wass Island shore, and anchor at pleasure;—the depth being from three to six fathoms, soft bottom. Or, continue the **NE.** course for the southern end of Beal's Island, having a high, bare hill, with white ledges cropping out over its surface, (**Beal's Mountain,**) to the northward of the course; and when within about one-third of a mile from shore, anchor in the mouth of The Flying Place, in from four to six fathoms, soft bottom. These are the only anchorages fit for strangers.

The above courses pass a little over a quarter of a mile to the northward of the northern end of Browney Island Ledges; a quarter of a mile to the westward of The Old Bachelor; about four hundred yards to the eastward of the shoals off Ram Islands; and nearly a quarter of a mile to the westward of those off Slate Island.

FLAT ISLAND PASSAGE

is next to the westward of the Fisherman's Island Passage, its entrance being between Outer Sand Island and Flat Island. It is a wide and deep channel, leading to the northward, between Outer Sand, Inner Sand, Drisco, Brown's and Stevens' islands, the Duck Ledges and Shabbit Island on the east, and Flat, Plummer's and Ram islands on the west. It is nearly free of dangers; and not less than nine fathoms can be taken through it into the main channel of the reach. The entrance may be recognized by Flat Island on the western and Outer Sand Island on the eastern side.

Flat Island. Flat Island lies a mile and quarter to the westward of Outer Sand Island and a mile and five-eighths to the eastward of Nash's Island. It is a low, rocky islet, about three hundred and fifty yards in diameter, and surrounded by ledges, called **Flat Island Ledges**, which extend to the northward from the island three-eighths of a mile and to the southward two-thirds of a mile. The island should receive a berth to the northward of not less than a mile, but may be approached within three hundred and seventy to four hundred yards, either on its eastern or western side.

Outer Sand Island. Outer Sand Island, before described, (page 74,) is a high, grassy island, with a very scanty growth of spruce and fir, and a number of dead trees standing like spars here and there. It is two miles to the westward of Browney Island. Next to the northward lies **Inner Sand Island**; and to the northward of this, **Drisco Island**; both of which have been already fully described, (page 74.)

Off the western shore of Drisco Island lies a small island, called **Brown's Island**, two hundred and fifty yards from Drisco, and low, rocky and bare, with the exception of a few dead trees standing here and there over its surface. Its shores are bold-to. An excellent channel exists between it and Drisco Island, through which not less than seven fathoms may be taken.

Plummer's Island. On the western side of the channel, a little above Brown's Island, and a mile and a half to the northward of Flat Island, lies Plummer's Island. Seen from the southward and westward it looks like two wooded islands, of moderate height, and presents a bold, white, rocky face to the eastward. This island lies **W NW.** and **E SE.**, and is a little over **six** hundred yards long. On its eastern, northern and western sides it is tolerably bold-to, and may be approached within one hundred and fifty yards; but on its southern side lies *Plummer's Island Ledge*, a quarter of a mile from the shore.

Nearly opposite to Plummer's Island, on the eastern side of the channel, lies **Stevens' Island**, before described, (page 74,) Its western end is shoal to a distance of three-eighths of a mile. Passing to the northward of Plummer's Island you will open **Ram Island**, which will appear a little over half a mile to the westward, on the southern side of Tabbott's Narrows. It is of moderate height, rocky, and covered with a very thick growth of trees, giving it a round, bushy appearance.

Duck Ledges. On the eastern side of the channel, about half a mile to the northward of Stevens' Island, lie the Duck Ledges, the westernmost of which marks the eastern limit of the channel, and is a long ledge, bare at one-quarter ebb, lying **NE.** and **SW.**, about a quarter of a mile to the westward of the large ledges. A quarter of a mile to the northward of it will be seen **Shabbit Island**, lying on the eastern side of this channel and on the south side of the main channel, and marking the point of union of the two. It is low, rocky and wooded, and about an eighth of a mile long. On its southern side it is tolerably bold-to, but it should receive a berth of nearly two hundred yards to the eastward from vessels passing to the westward.

When abreast of Shabbit Island you will enter the main channel about seven-eighths of a mile above Tabbott's Narrows.

DANGERS

IN FLAT ISLAND PASSAGE.

Flat Island Ledges. The approaches to this channel are clear until near Flat Island, off the south end of which extend the dangerous Flat Island Ledges to a distance of two-thirds of a mile. These consist of a great number of small detached rocks, most of which are bare at low water, and have small slues with from four to seven feet among them. To avoid them, pass to the southward of Flat Island not less than a mile. They always show themselves, and are not buoyed.

Stanley's Ledge. On the eastern side of the entrance look out for Stanley's Ledge, lying a little over a quarter of a mile to the southward of Outer Sand Island. It is bare and rocky, and is connected with Outer Sand Island by a line of sunken rocks. The bare rocks should not be approached nearer than a quarter of a mile from either the southward or westward.

There are no dangers in this passage in mid-channel, but only on the sides. In beating, when standing to the westward do not approach Flat Island nearer than four hundred yards; and when

standing to the eastward give Outer Sand and Inner Sand islands a berth of a quarter of a mile. When to the northward of Flat Island, and standing to the westward, give that island a berth to the southward of not less than half a mile; and when up with the southern end of Drisco Island do not stand to the westward of the eastern end of Plummer's Island bearing **N.** by **E.**, for there are *many shoal spots and bare detached ledges* lying to the southward of Green Island at distances varying from a half to five-eighths of a mile. By following the above directions there will never be less than three and a half fathoms water.

Plummer's Island Ledge.

Plummer's Island Ledge lies about a quarter of a mile off the southern shore of Plummer's Island, has about three feet at mean low water, and is not buoyed. To avoid it, do not stand to the westward of the eastern end of the island bearing **N.** by **E.**

Brown's and Drisco islands, on the eastern side of the channel, are both bold-to; but ledges make off from the western end of Stevens' Island about six hundred and fifty yards, and are in many places bare at low water. The western end of this island should, therefore, receive a berth to the eastward of not less than three-eighths of a mile.

Duck Ledges.

The westernmost of the Duck Ledges, which is bare at one-quarter ebb, lies about half a mile to the northward of Stevens' Island and a little over a quarter of a mile to the westward of the easternmost Duck Ledge, and should not be approached nearer than three hundred yards, as there are sunken rocks to the westward. After passing it there are no more dangers until you enter the main channel of the reach.

SAILING DIRECTIONS

FOR FLAT ISLAND PASSAGE.

With Nash's Island Light-house bearing **NW.** ¼ **N.** and the southern end of Browney Island **E.** by **N.** ¼ **N.**, (each being distant three miles and one-eighth,) steer **N.** by **E.**, which will lead safely through the passage as far as Shabbit Island. When abreast of this island, in nine fathoms water, and about six hundred yards off, steer **NE.** by **E.** until the northernmost of the Duck Ledges (that which is always bare and has the cap of grass upon it) bears **S.** ¼ **E.**, when you will have five and a half fathoms water, and must steer **E.** ¼ **S.** for the anchorage off Jonesport. On the above courses there will not be less than nine fathoms as far up as Shabbit Island; thence until the northern Duck Ledge bears **S.** ¼ **E.**, not less than five; and thence to the anchorage not less than four fathoms.

Anchorage may be had between Drisco and Stevens' islands, in from six to nine fathoms, by rounding Brown's Island to the eastward, giving it a berth of about one hundred and fifty yards, and steering **E.** ½ **N.**, about for Sea-Duck Rock. Keep the Stevens' Island shore best aboard; and, when past its western end, anchor. The bottom is soft.

CONE ISLAND PASSAGE.

There is an excellent entrance to Moos-a-bec Reach from the southward, between Flat Island on the east and Cone and Nash's islands on the west, having no dangers; and the only sailing directions necessary are to keep off the shores of the Islands. This passage leads into Tabbott's Narrows at their western end, is over a mile wide at its narrowest point, and has not less than ten fathoms.

Cone Island.

Cone Island, lying on the western side of the entrance, is a little over a mile **NW.** ¾ **W.** from Flat Island. It is low, grassy, and covered with a scanty growth of spruce and pine; and tolerably bold-to, except on its southern side, (where there are ledges making off a quarter of a mile,) and on its western side, where it is joined at low water to Nash's Island.

Nash's Island and Light-house.

Nash's Island is low, rocky, entirely bare, and about three hundred and fifty yards long. Ledges make out from it about a quarter of a mile to the southward. On this island is built Nash's Island Light-house,—a guide to Pleasant Bay, Cape Split Harbor and Moos-a-bec Reach. It is a white tower, twenty-eight feet high, connected with the keeper's dwelling by a covered way; shows a fixed red light, of the fourth order of Fresnel, from a height of forty-seven feet above the sea, and is visible, in ordinary weather, twelve miles. Its geographical position is

Latitude	**44° 27′ 51″ N.**
Longitude	**67° 44′ 50″ W.**

Green Island.

Green Island, lying about a mile and a half to the northward of Flat Island and about three hundred yards to the southward of Ram Island, in Tabbott's Narrows, must be left to the eastward by vessels entering by this passage. It is low, bare and rocky, with a grassy surface, but no trees. It is surrounded by ledges; and there is no passage between it and Ram Island.

SAILING DIRECTIONS

FOR CONE ISLAND PASSAGE.

Coming in from the southward and westward, bring Nash's Island Light-house to bear N. by E., one mile and a half distant, with about twenty fathoms water, soft bottom, and steer NE. ½ N., which course will lead into Tabbott's Narrows at their western end. There will not be less than ten fathoms until you reach the Narrows; after which there will be nothing less than four fathoms to Jonesport.

These courses pass a quarter of a mile to the eastward of Cone Island; the same distance to the westward of Green Island; and midway between Ram and Sheep islands.

In beating through Cone Island Passage, do not approach Nash's Island from the southward nearer than three-eighths of a mile, nor the southern end of Cone Island nearer than six hundred yards; but you may stand close to the eastern point of the latter, as it is quite bold-to. In standing to the eastward, to the northward of Flat Island, give that island a berth of half a mile, and Green Island a berth to the northward of nearly five-eighths of a mile, *to avoid the shoals lying off those islands.* The western shore of Green Island should receive a berth to the eastward of two hundred and fifty yards.

Cone Island Passage is an excellent channel, and is frequently used by vessels bound to the westward, after they have passed through Tabbott's Narrows.

LIGHT-HOUSES.

NAME.	Latitude N.	Longitude W.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		s.	Feet.	
Moos-a-bec Light-house	44 28 27	67 31 55	4 30 7.7	Revolving	30	65	13
Nash's Island Light-house	44 27 51	67 44 50	4 30 59.3	Fixed red.	.....	47	12

TIDES.

Corrected Establishment at Jonesport	10h 58m
Mean Rise and Fall of tides	11.7 ft.
Mean Rise and Fall of Spring tides	12.4 ft.
Mean Rise and Fall of Neap tides	11.0 ft.
Mean duration of Rise	6h 10m
Mean duration of Fall	6h 15m

VARIATION OF THE COMPASS.

The approximate magnetic variation in Moos-a-bec Reach for the year 1879 is 16° 48′ W., and the approximate annual increase 2′.

LIFE-SAVING STATION.

A life-saving station, provided with boats and other appliances for assisting vessels in distress, has been established on Browney Island by the United States Government.

ICE IN MOOS-A-BEC REACH.

This reach is rarely closed to navigation during the winter;—only two cases being known within the memory of those residing on its shores. These occurred in the winters of 1856–7 and 1874–5. The formations are usually local;—beginning about the middle of December, and subsequently rendered more formidable by accessions of drift-ice from Englishman's Bay and Pleasant Bay. In severe winters (like those mentioned above) the drift-ice in great quantities lodges in the channels among the islands, extends out seaward as far as the eye can reach, and freezes into a solid mass;—thus effectually opposing all navigation. In 1874–5 no navigation was possible during the month of February; and it was not safe for sailing-vessels to attempt the reach from the twenty-eighth of January until the twenty-first of March.

Winds from the northward and eastward are the most likely to break up and clear the reach of both local and "drift"-ice. Westerly and southwesterly winds force "drift"-ice into it; while southerly winds, being generally accompanied by a heavy sea and milder temperature, have a tendency to break the ice up and cause it to disappear.

The tidal currents are sufficiently rapid to prevent extensive local formations and to carry off "drift"-ice, under ordinary circumstances; but in severe winters the extent and thickness of the masses bid defiance to the utmost strength of the currents unless assisted by strong favorable winds.

INDIAN RIVER

empties into Moos-a-bec Reach on the western side of Hopkins' Point. It is an arm of the sea, running about **N.** by **E.** and **S.** by **W.**, and a little over two miles long; is separated into two streams by a large island called **Moose Island**, which extends nearly the whole length of the river; and is about a mile and five-eighths long and a little over half a mile wide. That part of the river to the eastward is called **East River**, or Indian River proper; that to the westward is called **West River**, and both are entirely unsafe for strangers to enter, as the channel is narrow and crooked, and both branches are full of bare ledges and sunken rocks. There is little or no trade;—what there is being carried on by light-draught vessels, whose masters are well acquainted with the dangers. A pilot can always be obtained at Jonesport for either river.

Doyle's Island.

Off the mouth of East River, and close in with Hopkins' Point, lies Doyle's Island, about half a mile long **E.** and **W.**, low and wooded, except near its eastern end, where the land is cleared, and has a house and out-buildings. It is separated from Hopkins' Point by a passage about one hundred and fifty yards wide, called **Whiting's Passage**, which is, however, only fit for small boats. Two spruce trees, standing close together, on the southwestern point of the island, serve to distinguish the entrance to Indian River, as there are no other trees on the point.

Goose Islands.

From three-eighths to five-eighths of a mile to the westward of Doyle's Island lie the Goose Islands, six in number, low and well wooded, except the one next to the southernmost, which is a small, low island, with only a few scattered spruce on its flat, grassy surface. The third islet of the group is very thickly wooded, and has a hut on its eastern shore near the northern end. The channel into Indian River lies on the western side of this group, and between Moose Island on the north and Doyle's and Goose islands on the south. The passage between Doyle's and Goose islands is too full of ledges to be of use.

Bickford's Point, the western point of entrance to West River, is barren, rocky, and nearly destitute of trees. There are one or two houses on its extremity, but the general appearance of the land is very desolate. All of its approaches are very shoal.

Moose Island.

Moose Island, when viewed from the southward, presents a low, rocky surface,—the summit crowned with spruce and fir and scrubby bushes. There are a few houses on the bank; and its southeastern extremity shows a round knubble of moderate height, crowned with a group of spruce and fir, and presenting a peculiar appearance. Fish-weirs extend off from the shore to the edge of the channel, and ledges (most of them bare at low water) extend nearly half way across the entrance.

The western banks of West River show undulating surfaces, diversified with wooded land and cleared slopes,—the latter extending to the water's edge. There are very few houses. The channel, after passing Bickford's Point, is more free of ledges than that of East River, and ten feet at mean low water may be taken about a mile and a quarter above Bickford's Point.

The shores of East River have the same general character as those of West River, but the eastern banks are indented by several coves or creeks. The southernmost of these, called **Hay Creek**, makes into the eastward a little over a quarter of a mile above Hopkins' Point. **Snare Cove**, a little over two-thirds of a mile to the northward of Hay Creek, is a small, semicircular cove of no importance; and just to the northward is **Snare Creek**, which is about thirteen hundred yards long, but dry at low water. The banks of East River are generally low or of moderate height, mostly wooded, but occasionally cleared and thinly settled. The general course of the river is about **N NE.** for nearly two miles, where it joins West River at the northern end of Moose Island. The passage between this island and the mainland to the northward is a little over one hundred yards wide, and crossed by a bridge. There is a small settlement about half a mile above this, on the banks of the East River, called **Indian River Settlement**. Seven feet at mean low water may be taken up this river about a mile and a half above its mouth; but the channel is too narrow and intricate for strangers.

No sailing directions can be given for either branch of Indian River. The channels are very narrow and crooked, and are obstructed by numerous and very dangerous ledges, none of which are buoyed. Vessels bound up must take a pilot in Moos-a-bec Reach.

CAPE SPLIT HARBOR.

The entrance to this harbor is a little over half a mile to the westward of Sheep Island, (in Tabbott's Narrows,) and is contained between the western shores of Moose Neck and Cape Split. It is a little over a quarter of a mile wide, and has not less than seven fathoms. The harbor is an excellent refuge, and is frequently used,—easy of access, especially to vessels coming from the eastward through Tabbott's Narrows, or from the southward through Cone Island Passage. It is a wide cove, almost a mile and a quarter long, with a general course **N NE.** and **S SW.**, widening out above the entrance to nearly three-quarters of a mile from shore to shore. Three fathoms can be found at the anchorage, and the holding-ground is excellent.

Cape Split.

Cape Split, forming the western side of the harbor, is a remarkable looking headland,—being a high, rocky bluff, bare, except at its southwestern end, where it presents a black, wooded face, and along its southeastern face, where there is a growth of black-looking fir and spruce.

There is a round, rocky islet of peculiar appearance, lying off the southwestern shore of the cape, called **The Castle.** It is crowned with fir and spruce, and has perpendicular faces, while its summit is quite flat.

The shores of **Moose Neck**, forming the eastern side of Cape Split Harbor, are rocky and undulating, with a scanty growth of trees. Both banks are thinly settled and under partial cultivation.

DANGERS

IN APPROACHING AND ENTERING CAPE SPLIT HARBOR.

I. ***From Tabbott's Narrows.***—Coming from the eastward through Tabbott's Narrows, and wishing to enter Cape Split Harbor, beware of *the ledges lying on the eastern side of the entrance*, three hundred and fifty yards to the southward of Moose Neck. These ledges, several of which are bare at low water, lie about half a mile to the westward of Sheep Island, and are not marked; but almost always show themselves. They are the only dangers in entering from the eastward.

Cape Split may be approached, in going in, within one hundred yards, with not less than three fathoms; and not less than four fathoms can be carried up to the anchorage.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING CAPE SPLIT HARBOR.

I. ***From Tabbott's Narrows.***—When, on the **SW.** by **W.** course through the Narrows, the western end of Sheep Island bears **NW.** by **N.**, (or is exactly abeam,) with five and a half fathoms, soft bottom, steer **NW.** by **W.** $\frac{3}{4}$ **W.** until the middle of the entrance to the harbor bears **N NE.** Now steer that course, and, when up with **Tabbott's Cove**, (which is on the eastern side, about a quarter of a mile above the entrance,) haul into it, and anchor according to draught. Here you may moor **NW.** and **SE.**, and lie safe from all winds, in not less than three fathoms. But, in northerly winds, you may anchor anywhere in the channel after passing the entrance. In **SW.** or southerly winds the harbor is open, and the best anchorage is in Tabbott's Cove.

On the course from Sheep Island for the entrance to Cape Split Harbor there is not less than four fathoms; on the course in, nothing less than six fathoms; and up to the anchorage, not less than three fathoms.

The course from the Narrows to the entrance to the harbor passes about one hundred and fifty yards to the southward of the ledges off the western end of Moose Neck; and the course in passes about one hundred yards to the westward of the same ledges,—keeping the Cape Split shore more aboard, as there are no dangers.

DANGERS

IN APPROACHING AND ENTERING CAPE SPLIT HARBOR.

II. ***Coming from the Southward, through Cone Island Passage.***—There are no dangers in this passage (for description of which see pages 79–80) until up with The Ladle, about fifteen hundred yards to the northward of Cone Island. This is a remarkable looking islet, about two hundred and fifty yards long, lying **N NW.** and **S SE.**, and bearing a faint resemblance to a ladle upside down. Its southern end is low, bare and rocky; and its northern end a high, round head, crowned with stunted fir and spruce and with perpendicular faces, and called the **Bowl of the Ladle.** About three hundred and fifty yards to the eastward of The Ladle is *a small rock, bare at low water*, and tolerably bold-to,—there being not less than four fathoms between the two. This is the only danger in approaching Cape Split Harbor through this channel, and is easily avoided by giving The Ladle a berth of a quarter of a mile to the westward.

The Ladle.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING CAPE SPLIT HARBOR.

II. ***From the Southward, through Cone Island Passage.***—Bring the eastern end of Cape Split (or the western point of the harbor entrance) to bear **N.** $\frac{1}{4}$ **E.**, three miles distant, when you will be abreast of the southern end of Flat Island Ledges, and about half a mile to the westward, in sixteen fathoms water, soft bottom. Now steer **N.** $\frac{1}{4}$ **E.** until the northern end of The Ladle bears **SW.** by **W.** $\frac{1}{2}$ **W.**, distant three-eighths of a mile, with nine fathoms water, when the middle of the entrance will bear **N NE.**, and that course will lead in.

On the above courses there is not less than nine fathoms up to the entrance to the harbor.

DANGERS

IN APPROACHING AND ENTERING CAPE SPLIT HARBOR.

III. ***Coming from the Westward.***—To enter this harbor from the westward the usual rule is, after passing Petit Manan Light-House, to bring it to bear **SW.** $\frac{1}{4}$ **W.** and steer **NE.** $\frac{1}{4}$ **E.** On this

course, when a little over two miles and a quarter from the light-house there will be seen to the northeastward, and about a mile and a quarter distant, a red spar-buoy. This is on Jordan's Delight Ledge, formed by a line of reefs about a mile long, extending to the southward from an islet called **Jordan's Delight.** These rocks are all under water, and it is not safe to pass between the buoy and the islet. Jordan's Delight is a rocky islet, of moderate height, entirely covered with a dense black growth of trees, and lying about seven-eighths of a mile to the southward of Pond Island, and in the middle of the approaches to Narraguagus Bay. Seen from the westward it shows a bare, precipitous head, backed by trees. The red spar-buoy on Jordan's Delight Ledge is marked No. 2, and must be left to the westward. ***Jordan's Delight Ledge.***

There is said to be a ledge with eighteen feet at low water, two and three-eighths miles **N E.** ½ **E.** from Petit Manan Light-house, called *Dave Leighton's Ground.*

Passing the red spar on Jordan's Delight Ledge, you leave to the northwestward, about a mile and a half distant, a red and black nun-buoy. This is on Jackson's Ledge, which has twelve feet at low water, and lies about four miles **E.** ¾ **N.** from Petit Manan Light-house. It is not in the way, however, of vessels using this passage unless they are beating. ***Jackson's Ledge.***

After passing these ledges the course continues to the northeastward for Cape Split, and the first danger met with is called The Big Pot, a high, bare islet, entirely destitute of vegetation, and about one hundred yards long. Its eastern end is high and very steep, with red and yellow rocks on the summit, while those nearer the water are black. This rock lies one mile **N.** ¼ **E.** from Nash's Island, and about a mile and an eighth **SW.** ½ **W.** from the entrance to Cape Split Harbor. It is tolerably bold-to, may be approached to within one hundred and fifty yards, and must be left to the eastward. ***The Big Pot.***

Three-eighths of a mile **E.** from The Big Pot lies The Pot, a barren rock, about ten feet above high water. Extensive shoals surround it, and it should receive a berth of about an eighth of a mile to the eastward. **The Ladle,** lying an eighth of a mile to the eastward, should not be approached nearer than two hundred yards. ***The Pot.***

On the northwestern side of the channel, about three-quarters of a mile **N.** of The Big Pot, there will be seen a black spindle, formed by an iron tripod and shaft, thirty-five feet high, with a ball on top. This is on Norton's Reef, or *Norton's Ledge,* as it is sometimes called, lying on the eastern side of the entrance to Pleasant Bay, (two-thirds of a mile to the westward of Cape Split,) and bare at low water. The spindle must be left well to the westward. ***Norton's Reef.***

When up with the eastern end of Cape Split give it a berth to the northward of one hundred and fifty yards; and do not approach the eastern side of the entrance nearer than two hundred and fifty yards, *to avoid the ledges off the western shore of Moose Neck.* (See preceding page.)

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING CAPE SPLIT HARBOR.

III. ***Coming from the Westward.***—When past Petit Manan Light-house, bring it to bear **SW.** ¼ **W.**, and steer **NE.** ¼ **E.** until up with the red buoy on Jordan's Delight Ledge. Pass to the eastward of this, and steer **NE.** ½ **E.** for Cape Split, passing to the northwestward of The Big Pot and to the eastward of the spindle on Norton's Reef. When The Pot bears **S SE.**, three-eighths of a mile distant, with eight fathoms water, soft bottom, steer **E.** by **N.** ¼ **N.**, giving the eastern extremity of Cape Split a berth to the northward of about one hundred and fifty yards, and carrying not less than seven fathoms; and when in the middle of the entrance, steer **N NE.** into the harbor.

The above courses pass to the eastward of Jordan's Delight Ledge; well to the westward of Jackson's Ledge; three hundred yards to the westward of The Big Pot; three-eighths of a mile to the northwestward of The Pot; and half a mile to the eastward of the spindle on Norton's Reef. On these courses there will not be less than six fathoms.

PLEASANT BAY

lies on the western side of Cape Split,—the entrance being between Ripley's Neck and the cape. Between these two points it is a little over two miles and a quarter wide, but gradually diminishes to a width of a quarter of a mile at the Upper Narrows, about three miles above, where Pleasant River discharges itself into the bay. Its general trend is about **N NE.** and **S SW.** Both banks are tolerably high and well wooded, and there are very few settlements.

Into the northern end of Pleasant Bay empties Pleasant River, running in about the same direction three miles and a quarter to the town of Addison, built on its northern bank, where the river makes an abrupt turn to the eastward. Addison is six miles and three-quarters above the mouth of the bay. Several islands and islets lie off the entrance to this bay, and there are many in the bay itself. The channels are intricate and unsafe for strangers, who should always take a pilot at Cape Split, Millbridge, or on one of the adjacent islands.

Cone Island. Cone Island lies one mile and five-eighths to the southward of Cape Split, and is low, grassy, and covered with a scant growth of spruce and pine. It is tolerably bold-to except on its southern side, where ledges make off for a quarter of a mile. It lies on the eastern side of the entrance to Pleasant Bay, and is joined at low water to Nash's Island, an eighth of a mile to the westward. This island is about three hundred and fifty yards long, and is low, rocky and entirely bare. Here is built the light-house, which is a guide to this bay as well as to Moos-a-bec Reach and Cape Split Harbor. It is a white tower, twenty-eight feet high, (connected by a covered way with the keeper's dwelling,) showing a fixed red light, of the fourth order, from a height of forty-seven feet above the sea, visible in ordinary weather twelve miles. Its geographical position is

Nash's Island and Light-house.

Latitude ..... **44° 27′ 51″ N.**
Longitude ..... **67° 44′ 50″ W.**

Flint Island. Flint Island lies on the western side of the entrance to Pleasant Bay, about one mile and five-eighths to the westward of Cape Split and one mile and three-eighths from Nash's Island. It is rocky, and bare of all vegetation except a very scanty growth of stunted fir near its eastern and western ends; and is about five-eighths of a mile long in a **NW.** and **SE.** direction. A little to the westward of it will be seen a very peculiar-looking islet, called Ship-Stern Island. When viewed from the southeastward this island shows as a high, bluff, rocky head, with a thick growth of trees covering its summit. On its southwestern end the rocks are stratified horizontally with black and brown strata, and this appearance, together with the shape of the point, (somewhat like the stern of an old-fashioned ship,) has given the name to the islet.

Ship-Stern Island.

Dyer's Island. About a quarter of a mile to the northward of Flint Island lies Dyer's Island, a large island, extending nearly **N.** and **S.**, and about two miles long. It is rocky, of considerable height, diversified with woods and bare, rocky shores, and forms part of the eastern shores of Narraguagus Bay, separating that bay from the approaches to Harrington and Pleasant bays.

Norton's Island. On the eastern side of the bay, and about one-third of a mile to the westward of Cape Split, lies Norton's Island, sometimes called **Dock Island**,—a barren islet of moderate height, lying nearly **N.** and **S.**, and about half a mile long. From it a long ledge makes off in a southwesterly direction, bare at half ebb, and has on its end a black spindle surmounted by a ball. This ledge is called *Norton's Reef* or *Ledge*. (See pages 69 and 83.)

Cape Split. **Sheep Island** is a low, sandy islet, with trees in black clumps scattered over its surface, lying between Cape Split and Norton's Island; but, to the northward, Cape Split, the eastern point of entrance to Pleasant Bay, will appear as a high, bald head, with a thick border of black-looking trees fringing its northwestern face.

On the western side of the entrance will be seen Ripley's Neck, high, rocky and very thickly wooded, mostly with oak and birch. **Ripley's Point**, however, (the southern end of the neck,) is a high, round, rocky head, covered with spruce and fir. A group of islets, known as the **Narrows Islands**, lie off this shore, near Ripley's Point. They are nearly all of moderate height, rocky and well wooded. A small island, called **Potato Island**, lies close to Ripley's Point,—and is low and rocky, with a number of dead trees upon it. Between this and the Narrows Islands there is a passage, called **The Narrows**, leading into Harrington and Narraguagus bays. There is sufficient depth in it at high water for vessels drawing eighteen feet, but no stranger should attempt the passage.

Ripley's Neck.

Carrying-Place Cove. On the western shore of the bay, about one mile and a quarter above Ripley's Point, will be seen a large cove, called Carrying-Place Cove, of little importance, but offering fair anchorage for vessels drawing twelve feet. The shores at its head are gently sloping, cleared and cultivated; but the northern shore is rocky and wooded with scrub, and the southern shore shows yellow sand cliffs, about twenty feet high, covered with trees. In many places the face of the cliffs is hidden by a growth of scrub; in others it crops out bold and bare. A couple of rocky islets, covered with scrub, lie in the mouth of this cove, nearest to the northern shore.

The eastern side of Cape Split is rocky, barren and wooded, except in one place just above the high land of the cape, where it is low, flat and grassy, and slopes gently to the edge of the bank, which has low, sandy faces. There is a small settlement on this side of the cape. The bank is faced by a sand beach,—the only one on this shore between Cape Split and Reef Point.

About a mile and a quarter above the extremity of the cape a large and wide cove makes in nearly **E SE.**, and about half a mile long, called Nash's Harbor, with a small settlement at its head. A low, rocky, wooded islet lies in the middle of the entrance; and a smaller one, bare of trees, a little to the northward. The larger islet is called **Nash's Harbor Island**, and there is a passage on either side of it. The southern point of the entrance to Nash's Harbor, called **Nash's Harbor Point**, is low, rocky, and covered with a thin and scattered growth of spruce and fir. This harbor affords shelter for light-draught vessels at high water, but is almost entirely bare at low water, and those who use it must lie aground.

Nash's Harbor.

Poet's Harbor. About three-eighths of a mile above Nash's Harbor, and nearly two miles above Cape Split, another cove will be seen on the eastern shore, called Poet's Harbor. It is narrow, runs nearly **E.** and **W.**, and is about half a mile long. A rocky islet, thickly wooded with birch, spruce and other trees, lies in the mouth of the cove, close in with the northern shore, and, until closely approached, appears to be part of the mainland. This is **Poet's Island.** The cove is of no importance, being bare at low water.

In entering Pleasant Bay the first island met with on the eastern side, after passing Norton's Island, is **Eagle Island**, a round, rocky islet of moderate height, with a few stunted fir and spruce trees dotting its surface and fringing its banks. Next to the northward, but closer in with the eastern shore of the bay, is **Sheep Island**, (previously mentioned,) a low, sandy islet, covered with scattered groups of fir,—the trees standing in clumps, with bare spots between them.

The Night-Cap.

Next to the northward of Sheep Island is the entrance to Nash's Harbor; and about three-quarters of a mile above it is an islet called The Night-Cap, grassy and bare of all trees except two tall spruce trees on its western end standing close together. It lies nearly midway between the Narrows Islands and the entrance to Nash's Harbor.

Birch Islands.

Nearly half a mile above The Night-Cap will be seen a group of three islets, also in the middle of the bay, known as the Birch Islands. They are all round, rocky, and covered with a scattered growth of spruce, fir and birch. The two southernmost lie **E.** and **W.** from each other, and the third lies **N.** from the other two, and is noticeable for *peculiar red rocks on its southern end* close to the water. The southernmost Birch Islands lie abreast of the entrance to Poet's Harbor, and the northernmost islet nearly opposite to, but a little below, the mouth of Carrying-Place Cove, on the western shore.

When past the Birch Islands two other islets will be reached,—rocky and bare of trees, lying about an eighth of a mile to the northward of the former, and called Raspberry and Little Mink islands. The northernmost is **Raspberry** and the other **Little Mink Island**. Both are nearly round, and bare of everything but a thin growth of moss and grass. They lie **N.** by **E.** and **S.** by **W.** from each other, and about three hundred yards apart.

Guard's Point.

On the western shore of the bay, just above Raspberry Island, will be noticed a somewhat remarkable-looking point, called Guard's Point, low, wooded with a scanty growth of oak and birch, and presenting to the southeastward a remarkable yellow cliff-like face of sand. It cannot be mistaken.

On the eastern shore, nearly abreast of Raspberry Island, will be noticed a very remarkable-looking head called **Tumble-down-Dick**, a perpendicular wall of grey rock, with trees clinging to the face of the precipice, and the bare rock cropping out here and there in large masses. It is heavily wooded and about one hundred and fifty feet high. Close in with it lies a small, low, rocky island, covered only with scrub, except on top, near its northeastern end, where there is only grass, and called **Gibbs' Island**.

Seavey's Point.

On the northern side of Tumble-down-Dick is Seavey's Point, of moderate height, somewhat bluff and steep, cleared, cultivated, and with a house and out-buildings. On its southern side, between it and Tumble-down-Dick, a long cove makes in, called **Seavey's Cove**, of no importance.

Ramsdell's Cove.

On the western shore, about a quarter of a mile above Guard's Point, is a low, rocky islet, with only scrub on it, called **Fort Island**; and nearly half a mile above Guard's Point a long cove makes in, called Ramsdell's Cove. A line or row of houses stands on the hill at its head,—the two middle ones having red roofs. The cove makes in between two sandy heads with perpendicular faces, which are not named. Good anchorage for small vessels may be had in Ramsdell's Cove. On the northern side of the entrance lie two islets **NW.** and **SE.** from each other. They are low, sandy, and covered with scrub.

Hemlock Island.

On the eastern shore of the bay, and about a quarter of a mile above Seavey's Point, there will be seen a very remarkable-looking islet, called Hemlock Island,—its surface covered with a kind of dead grass intermingled with scrub, which gives it the appearance of being streaked with yellow and brown. A thin group of stunted trees grows on its southern end, and at low water it is joined to the eastern shore. Behind Hemlock Island makes in a long and deep cove called **Look's Cove.** Here are the **Upper Narrows** and the mouth of **Pleasant River**, which is here only about a quarter of a mile wide.

A small, low, grassy island, bare of trees, lies about one hundred yards to the northward of Hemlock Island.

Reef Point.

The eastern shores, from Seavey's Point to Reef Point, a little over a mile above, are very thickly wooded, and uninhabited. The river rapidly widens above the Narrows, and at Reef Point is about five-eighths of a mile wide. Reef Point is a long, level, grassy point, of moderate height, cleared and cultivated; and has sandy, water-worn faces, and a house and barn.

Richards' Point.

On the western shore, from Ramsdell's Cove to Richards' Point, about three-quarters of a mile above, the banks show sandy faces, and the land, which is flat and grassy, extends back to rocky and barren hills, dotted here and there with spruce and fir trees. Richards' Point is a high, grassy head, with sandy, water-worn faces from fifteen to twenty feet high,—its surface being flat, cleared and under cultivation. A farm-house and barn occupy the high ground. On the northern side of the point there is a long cove, called **Lower Wass Cove**, making in to the westward about half a mile, and dry at low-water. It is nearly opposite to Reef Point, and separated from Upper Wass Cove, a quarter of a mile above, by a large headland, called Wass Point,—a high, grassy head, with a house and barn, and an old lobster-packing house at the water's edge. It is about two miles below Addison, and forms the dividing point between Lower and **Upper Wass Cove.** The shores of this cove are all sandy, with water-worn faces; and there is a somewhat remarkable high, sandy cliff, crowned with a small grove of trees, on the southern side, near its head. On the northern side, at the entrance to the cove, is **Reynolds' Point**, a long, flat, sandy point, covered only with grass, and having sandy, water-worn faces.

Wass Point.

On the eastern shore of Pleasant River, for about a mile above Reef Point, the shores are barren and rocky and dotted with a scattered growth of scrubby fir and spruce. Thence to Addison they are mostly cultivated and settled, with occasional groves of small trees between the cleared fields. The cultivated lands are mostly flat or very gently sloping, and extend back to the higher lands, which are barren, rocky, and covered with the usual growth of stunted trees.

White's Point.

On the western shore, half a mile above Reynolds' Point, is White's Point. Between the two the banks are low, flat and sandy, with water-worn faces; and the land extends back to rocky hills crowned with stunted fir. White's Point is grassy, bare of trees, and has a small farm-house and barn. On its northern side makes in a broad cove called Dyer's Cove, or sometimes Dyer's Bay. It is of no importance, being quite shallow. When abreast of White's Point the village of Addison will be seen ahead, and about a mile and three-quarters distant.

Dyer's Cove.

Dyer's Cove, or **Dyer's Bay**, lies on the northern side of White's Point, and is about half a mile wide. Its northern point is thickly wooded with birch, oak and other deciduous trees, which makes it very noticeable, as it is the only point so timbered between Ramsdell's Cove and the village. The shores are mostly cleared, but are dotted with trees here and there; and at its head there is a settlement, with what appears to be a school-house, on the high land. This house is white and has a cupola or belfry on top.

From Dyer's Cove to the northward the western bank of Pleasant River is mostly cleared and cultivated. About a mile above the cove the river turns abruptly to the eastward, and on the western and northern bank, at the turn, is situated the village of **Addison**. The principal trade of this village is in lumber and ship-building,—vessels of one hundred and fifty and two hundred tons being built here; and even three-masted schooners of three hundred tons and upwards have been launched from the yards. Large schooners may load here at high water, but at low water they must lie aground. The river is only about two hundred and fifty yards wide abreast of the village, and rapidly narrows to only two hundred yards a short distance above.

The course of Pleasant River above Addison is first about **E.** for nearly a mile and a half, and then about **N. by E.**, with many windings, to the village of **Columbia**, a little over three miles above. But throughout all of this distance it is a mere creek in width, and is very shallow. Columbia is a little over four miles and a half above Addison.

A narrow and crooked channel, with six feet at low water, leads up to the village of Addison, but it is not for strangers.

GENERAL REMARKS.

Pleasant Bay is not fit for a harbor of refuge for strangers. Both the bay and river are so full of ledges (none of which are buoyed) that the passage is rendered in the highest degree unsafe, even at high water. Many of these ledges are bare at low water, and others at half-tide; but there are many dangerous sunken ones. The bay has not yet been surveyed, and in the absence of buoys for the ledges it is impossible to give any sailing directions whatever. The general course from the Upper Narrows to Addison is about **N NE.**

Narraguagus Bay and River to the westward, and Cape Split Harbor to the eastward, of Pleasant Bay, afford sufficiently good shelter; but a comparatively safe anchorage may be obtained on the northern side of Norton's Island;—the only danger in the way being *Norton's Reef*, (already described, pages 69 and 83,) making off from that island in a southwesterly direction, bare at half-tide, and marked by a large iron spindle surmounted by a ball.

In approaching Pleasant Bay, Harrington River, Narraguagus Bay or Pigeon Hill Bay from seaward, there will be seen to the northward and northwestward a long range of blue hills of different heights, but lying in a continuous chain. These are the **Tunk Mountains.** The most remarkable are **Humpback,** (which shows a summit composed of two large humps or hills,) and **Burke's Hill,** the southernmost of the range, which has a nearly flat top, with a steep slope to the southward.

HARRINGTON RIVER.

The entrance to this river lies on the western side of Ripley's Neck, between it and Dyer's Island. This and Flat and Back bays to the westward have a common entrance between the neck and the island. Harrington River is sometimes called **Great Nash's River.** Its general course is **N NE.** for five miles to Hardwood Point, where it turns to the northward and runs nearly **N NW.** for a mile and a quarter, to the village of Harrington. The entrance between Ripley's Point and Dyer's Island is about three-quarters of a mile wide, but is obstructed by Strout's Island, which lies almost exactly in the middle of the passage. The best water is between this island and Dyer's Island, and this passage, which is known as the **Eastern Passage** and sometimes as **Dyer's Island Narrows,** is commonly used by the coasting steamers in entering Narraguagus Bay from the eastward. Twelve feet at low water may be taken through it, but it is not recommended to strangers; nor can any stranger enter Harrington River with safety, as there are many flats and sunken ledges, none of which are buoyed, and the channel is narrow and intricate.

The principal trade at Harrington is in lumber and ship-building, but the latter is the chief industry. Only six feet at low water can be taken up to Nash's Point, opposite Hardwood Point, and above this there is no passage except at half-flood or high water.

In approaching this river from the southward, after passing Nash's Island, you pass to the eastward of Flint Island and to the westward of Norton's Island. About a quarter of a mile to the northward of the former will be seen a long and high island, called Dyer's Island, lying nearly **N.** and **S.** between the mouth of Harrington River and the entrance to Narraguagus Bay. It is high, rocky, and mostly wooded from the summit to the water's edge, but here and there are cleared and cultivated patches. The slopes are gentle where the cleared lands are seen, but the island is in most places steep. A very large reef extends along its eastern shore in a nearly **N.** and **S.** direction, breaking heavily at half-tide, and is known as *Dyer's Island Eastern Ledge.* **Dyer's Island.**

Off the northern end of Dyer's Island, and exactly in the middle of the passage, will be seen a high, rocky island, wooded at both ends, but cleared in the middle. This is Strout's Island. A very dangerous line of ledges, bare at half-tide, and known as *Middle Ledges* or *Strout's Island Ledges,* lie off its southeastern shore a quarter of a mile distant, and extend in a **N.** and **S.** direction for over a quarter of a mile. The best water into the river is between this island and Dyer's Island,—the passage between Strout's Island and Ripley's Neck being too ledgy for safe navigation. **Strout's Island.**

Opposite to Strout's Island, on the eastern shore, is **Ripley's Point,** the southern extremity of Ripley's Neck, a high, round, rocky head, covered with spruce and fir, lying between this entrance and Pleasant Bay. The western shore of the neck shows high lands, mostly thickly wooded, but in places cleared and cultivated,—the cleared lands having a gentle slope, but the wooded shores being mostly steep. **Ripley's Neck.**

Foster's Island, on the western shore, about a quarter of a mile to the northward of Dyer's Island and opposite to Ripley's Neck, is a long, narrow island, extending **N.** and **S.**, and a mile and a half long. A good channel, with not less than twelve feet at low water, leads between this and Dyer's Island into Eastern Passage, and is commonly used by the coast steamers. Foster's Island is high, rocky and well wooded,—there being but very few clearings. The northern end is quite low, and thickly wooded to the edge of the shore with a variety of trees. **Foster's Island.**

Ray's Point lies nearly due **E.** from the northern end of Foster's Island, half a mile distant, and a mile and three-quarters above Dyer's Island. It is on the western side of the river,—being the southern extremity of a long, narrow peninsula separating Harrington River from **Back Bay,**—and is low and sandy, covered with grass and a few scrubby bushes, and has a couple of houses standing in a grove of spruce and fir trees. Between it and Ripley's Neck the passage is a little over half a mile wide **Ray's Point.**

Off the northern end of Ripley's Neck, on the eastern side, and close in with the shore, lie two small islands called Ripley's Islands, of moderate height, and very thickly wooded with a variety of trees. The northernmost and larger of the two has a house and outbuildings on its northern end. Passing Ray's Point to the northward, a long cove or bay, called **Flat Bay,** will be opened, extending to the northward nearly two miles. To the northeastward Harrington River stretches away between high, wooded banks; and the high lands, crowned with thick black woods and dotted with houses on their southern slopes, (which will be seen at the head of the river,) form the site of the village of Harrington. **Ripley's Islands.**

On the eastern side of the entrance to Flat Bay, and on the western side of Harrington River, lies Pinneo's Point, nearly a mile above Ripley's Islands and a mile and a quarter above Ray's Point. Seen from the southward, its eastern side appears to be thickly wooded to the edge of the water, while the western half of the point shows a cleared and cultivated field backed by woods, and having several houses The southern face is a water-worn, sandy cliff, about twenty feet high; and in range with it will appear a low, sandy islet, with its surface covered with scrubby bushes and its shores lined with boulders. This is **Chamberly Island,** and lies in the mouth of Flat Bay. **Pinneo's Point.**

On the eastern shore, on the northern side of Ripley's Neck, a large and wide cove makes in to the southeastward, called Ripley's Cove. It is shallow,—affording shelter to vessels of very light draught (four to six feet) only. The cove is about half a mile long, and three-quarters of a mile wide at its mouth, gradually diminishing to three-eighths of a mile at its head. The shores are all wooded; in fact, from Ripley's Neck to Timber Cove, a mile and a half above, the eastern bank of the river is mostly rocky, wooded and cultivated. On the southern side of Timber Cove there are some clearings and a few houses, but the soil has a poor appearance. **Ripley's Cove.**

On the western shore, about half a mile above Pinneo's Point, is a group of five rocky islets, known as the Five Islands, connected at low water by flats and bare ledges with the mainland. They are low and covered only with grass and scrub, except that the southernmost has a single spruce on its western end and also two small sheds. The cove formed on the western side of these islands with the mainland is called **Five Islands Cove.** At high water there is a passage for vessels of light draught between the two outer and three inner islands, but at low water this passage is bare. **Five Islands.**

Passing the Five Islands, you come to **Sandy Cove,** also on the western shore, three-quarters of a mile above Pinneo's Point. Its shores are low, sandy and wooded, except at its head, where is a marsh or salt meadow. A rocky islet lies in the middle, but there is no anchorage except for small boats.

On the eastern shore, a mile and a half above Ripley's Islands, lies Timber Cove, almost exactly opposite to Sandy Cove, and making in a southeasterly direction for nearly three-eighths of a mile. Between **Timber Cove.**

Hardwood Point on the south and **Coffin's Point** on the north it is a little over a quarter of a mile long. Just to the southward are some clearings and a few houses. The cove itself, however, is of no importance, as it is shallow,—affording no anchorage.

Mill Creek. A little over half a mile above Hardwood Point is Mill Creek, an arm of the bay, running **E.** and **W.**, and about three-quarters of a mile long. Small vessels may enter it at high water. Its entrance will be recognized by the thick grove of trees on its southern bank and the cleared level field on the northern side,—where there is also a house and barn.

On the western shore, about three hundred yards above Sandy Cove, lies a sandy islet, covered with a thin growth of birch and other hardwood trees, called **Cranberry Island.** From the Five Islands to about seven-eighths of a mile above Sandy Cove the shores have the same general character,—being low, sandy, with water-worn faces, and fringed with birch, maple and other hardwood trees. Here and there a patch of meadow-grass marks the outlet of a brook.

Oliver Lord's Point. **Lily Cove**, lying on the western shore, nearly a mile above Sandy Cove, is a long, shallow cove, with low, flat and wooded shores, fringed with meadow-grass, running nearly **N.** and **S.** Its eastern point of entrance is called Oliver Lord's Point, and is wooded thickly with spruce, birch, maple and other trees; and has a long, low, sandy, water-worn face on the southern side. It is a little above Mill Creek, on the eastern shore.

On the eastern shore, from Mill Creek to upper Hardwood Point, a mile above, the banks are flat, with water-worn faces; and the growth is scrubby fir and spruce, in thick groves, extending like spurs between the cleared lands.

Hardwood Point. Hardwood Point (to which we propose to give the name of **Cole's Point,** by which it is sometimes known) is low, flat, grassy and fringed with small bushes. Here the river turns nearly **N.**, becoming rapidly narrower, and continues one mile and a quarter to Harrington, where it is a mere creek, not more than forty yards wide, and is all flats.

Nash's Point. On the western shore, nearly opposite to Cole's Point, is Nash's Point, a little over half a mile above Oliver Lord's Point, and wooded almost to the edge of the water with a thick growth of birch, maple and other trees. Its eastern face is sandy and about ten or fifteen feet high.

The village of **Harrington,** although a small place, does considerable business in ship-building;—but it cannot be reached by vessels of any size before high water. Six feet may, however, be taken up to Nash's Point at low water.

DANGERS.

As none of the ledges in this river are buoyed it is not safe for strangers. There are many bare and sunken rocks and a number of mud-flats. Most of the flats are staked out. *Dyer's Island Eastern Ledge* is the first danger encountered,—a long reef, extending in a **N.** and **S.** direc-

Strout's Island Ledges. tion along the eastern shore of Dyer's Island, and breaking heavily at half-tide. It is not buoyed. Passing it we come to Strout's Island Ledges, or *Middle Ledges*, as they are sometimes called. These are on the eastern side of the entrance, and lie about a quarter of a mile off the southeastern shore of Strout's Island. They are bare at half-tide, and extend in a **N.** and **S.** direction for a quarter of a mile. There is no buoy, but the ledges always show themselves by breakers.

Ray's Point Ledges. Passing these ledges, there are no dangers until near Ray's Point, when look out for Ray's Point Ledges, making off in a southerly direction from that point, and bare at half-tide to a distance of two hundred and fifty yards. Shoal ground extends to the southward one hundred yards from the bare ledges. These ledges are not buoyed, but may be avoided by giving the point a berth of a quarter of a mile to the northwestward.

A little to the southward of Mill Creek, on the eastern shore, there is *a long ledge making out to a distance of about four hundred yards,*—its western end being marked by a stake. Off the southern point of the entrance to Mill Creek there is *another long ledge making out from shore for a quarter of a mile, bare at half-tide,* and also marked by a stake. After passing these ledges the only guides to vessels bound up river are the stakes on both sides of the channel. At low water, however, the flats are mostly bare and the channel is distinctly seen.

SAILING DIRECTIONS.

No stranger should attempt to pass up this river; but, in case of necessity, in day-time a harbor may be made either under the northern end of Dyer's Island, between that and Foster's Island, or farther up, between Foster's Island and Ripley's Neck. *To make this Anchorage:* When past Nash's Island, bring it to bear **SE.** by **S.** and steer **NW.** by **N.**, through the passage between Dyer's and Strout's islands. When past the northern end of the latter, bring a red spindle (which is on *Half-Tide Ledge* and will be seen to the westward, off the northern end of Dyer's Island) to bear **W.** by **S.** and steer **W.** ½ **S.**, which will bring you up with a red spar-buoy outside of the spindle. This is on Eastern

Flats, and here there is safe anchorage. *Or, when past Strout's Island,* steer **N.** by **E.** ½ **E.**, between Ripley's Neck and Foster's Island, heading for Pinneo's Point. Anchor at pleasure. Not less than twelve feet at low water is found on the above courses.

Dyer's Island Narrows, though tolerably well marked, is not safe for strangers. *Norton's Reef,* on the eastern side of Pleasant Bay entrance, is marked, as mentioned on page 83, by an iron tripod spindle, painted black; *Eastern Flats,* by a red spar-buoy (No. 4) placed in five fathoms; *Half-Tide Ledge,* by a red spindle or spar; *Dyer's Island Ledge,* by a red spar-buoy (No. 2) placed on the ledge; and *North Ledge,* by a second-class nun-buoy, painted black and marked No. 1. The red buoys are to be passed on the port hand and the black buoys on the starboard hand when entering from the eastward.

VARIATION OF THE COMPASS.

The approximate magnetic variation for Pleasant Bay and Harrington River is, for 1879, 16° 44′ W. The approximate annual increase is 2′.

FLAT BAY.

Flat Bay is a part of Harrington River, which makes into the northward between Pinneo's Point on the northeast and Blasket Point on the southwest. Between these two points the entrance is a little over a quarter of a mile wide, but is obstructed by Chamberly Island, lying off Pinneo's Point. Flat Bay runs nearly **N.** by **E.**, and is about two miles long, with an average width of about three-eighths of a mile.

Pinneo's Point, before described, (see page 87,) is its northeastern point of entrance. On its southern and southwestern sides this point appears as a high, rocky and well wooded head,—the trees coming down to the edge of the water. **Chamberly Island,** lying to the southwestward, is a low, sandy islet, with its surface covered with scrubby bushes and its shores lined with boulders. The channel is between it and Blasket Point, the southern point of entrance to Flat Bay. **Blasket Point.** This point lies on the western shore of Harrington River, one mile above Ray's Point; is sandy, of moderate height, with precipitous faces, covered with grass, and here and there a lone tree. Behind it makes in a large cove, which is, however, very shallow and of no importance.

When past Chamberly Island, Mill River will open to the northwestward, appearing as a large and wide bay, running nearly **N.** and **S.**, between heavily wooded shores. A high, bare hill is seen over the land on its eastern side, and low, cleared, gently sloping lands project like spurs between the clumps of forest. On the western bank of this river will be seen a settlement in the midst of grassy fields;—extending to the edge of the water, and called **Back Bay Settlement,** as it occupies the peninsula between Mill River and Back Bay and fronts on the latter. The **Tunk Mountains** are seen in the distance.

Three-quarters of a mile above Blasket Point, and on the western side of the bay, is a long, low, flat, grassy point, fringed with small oak and birch trees, and having a handsome grove and a group of houses on its highest part. This is **Oaks Point,** and is the northeastern point of entrance to Mill River, which runs into Flat Bay about three-quarters of a mile above Blasket Point. Its course is to the northeastward for nearly a mile, where it divides;—the main fork continuing about **N.** for seven-eighths of a mile to **Camden Mills,** and the eastern branch running about **N.** by **E.** for nearly three-quarters of a mile. This eastern branch is called **Cole's Creek.** Camden Mills are a mile and three-quarters above Oaks Point. The shores of Mill River and Cole's Creek are all well wooded, and there are a few houses on the eastern shore, between Oaks Point and the mouth of the creek. Both streams are very shallow, and there is no passage except at high water. **Mill River.**

The banks of Flat Bay above Oaks Point are sandy, with water-worn faces, of various heights, and diversified with wooded and cultivated lands. The western shore is composed almost entirely of a flat plain, with its surface partly wooded with large timber, and partly cultivated and thinly settled. All of this bay is shallow, and the upper part is bare at low water. There is no trade except the little depending on the saw-mills on Mill River.

BACK BAY.

A long and narrow peninsula, the southern extremity of which is called Ray's Point, separates Flat Bay and Harrington River from Back Bay, a large, shallow bay, of very irregular shape, connected with Harrington River by a passage leading between Ray's Point and Foster's Island, and with Narraguagus Bay to the westward by a passage between Foster's Island and the mainland. Its course is first about **N.** by **E.** from abreast of Ray's Point to Strout's Point, and then **NE.** nearly a mile and a quarter to its head.

Ray's Point, already described, (see page 87,) lies nearly **E.** from the northern end of Foster's Island, half a mile distant, and forms the eastern point of entrance to the bay. **Ray's Point.** It is a mile and three-quarters above Dyer's Island, is low and sandy, covered with grass and a few scrubby bushes, and has a couple of houses standing in a grove of spruce and fir trees.

The northern end of **Foster's Island** is quite low, and wooded to the edge of the water with a variety of trees.

Partridge's Island, lying off the entrance to Back Bay, about four hundred yards to the southward of Kemp's Folly, is a low islet, very thickly wooded.

Strout's Point, on the western bank, five-eighths of a mile above the northern end of Foster's Island, is tolerably high, rocky, and wooded with spruce and fir in clumps, except at its northeastern end, where it is thickly wooded, mostly with fir. Its shores show steep faces, but are shoal in their approaches,—shoal ground making off a long distance in the direction of Foster's Island. There is *a rock, bare at high water,* about four hundred yards from the point; but the flats extend a considerable distance to the southward of this,—the channel lying on the Foster's Island side. The flats are marked by fish-weirs, extending to the edge of the channel.

Strout's Point.

Kemp's Folly, four hundred yards to the northward of Partridge's Island, is low and grassy, and is easily distinguished by the handsome clump of birch and maple on its southeastern end. There are not more than a couple of dozen trees in the group, and they stand close together on the extreme point.

Kemp's Folly.

The shores of Back Bay above Strout's Point are all of moderate height and thickly wooded. The bay is shoal,—having at low water a very narrow and crooked channel with four feet in it,—is never used except by the people who live on its banks, and is of no importance.

NARRAGUAGUS BAY.

The entrance to this large and commodious bay, lying just to the westward of Pleasant Bay and Harrington River, is forty-three miles from West Quoddy Head, twenty miles from Libbey Island, and a little over twelve miles from Head Harbor Island. It lies between Dyer's and Flint islands on the east and Pond Island on the west, and is over two miles wide;—its general course being nearly **N.** for over four miles, when the Narraguagus River discharges itself into its northwestern end, and another branch extends in a **NNE.** direction towards Back and Flat bays.

The course of Narraguagus River is about **N.** by **W.** for nearly a mile and three-quarters, to Millbridge, situated on its western bank. Here the river is very narrow and is crossed by a bridge. Seven feet at low water can be taken up to the town, but the channel is not fit for strangers, who must anchor off the Steamboat Wharf, just below the mouth of the river; but a pilot can always be obtained either at this wharf or on Pond Island. Fresh water can be had at this anchorage, as well as at several other points on the river; wood is plentiful and cheap, and provisions can be obtained at Millbridge without difficulty.

In approaching this bay from the eastward, after passing Nash's Island, the most noticeable object will be Pond Island, upon which is the light-house, a guide to this bay. The island appears as a very regularly shaped hill, much like Green Mountain (on Mount Desert) in shape, but composed of barren rocks, dotted in a few places with trees. It is three miles and a half to the westward of Nash's Island and a little over two miles from Flint Island; lies **N.** by **E.** and **S.** by **W.**, and is nearly a mile long. Upon its southeastern end is built the light-house, appearing, when seen from the eastward, as two white objects, like the roofs of houses. On the northern end of the island there is a house and barn with a flag-staff near them. This part is low, level and grassy, but is not visible until the northern end is reached.

Pond Island.

Pond Island is on the western side of the entrance to Narraguagus Bay, and on the eastern side of the eastern channel into Pigeon Hill Bay; and the high, bare, rocky hill seen in range with its southern part is **Pigeon Hill.**

Pond Island Light-house, or **Narraguagus Light-house,** as it is sometimes called, consists of a brick dwelling-house, whitewashed, and surmounted by a white lantern twenty-nine feet above the ground; and shows a fixed white light, of the fifth order of Fresnel, from a height of forty-five feet above the sea, visible twelve miles. Its geographical position is

Pond Island Light-house.

Latitude ..... **44° 27′ 20″ N.**
Longitude ..... **67° 49′ 52″ W.**

A bell, struck by hand, is sounded during thick weather.

After passing Nash's Island, the first island met with by a vessel bound into Narraguagus Bay will be Flint Island, on the eastern side of the entrance, and a mile and three-eighths from Nash's Island. When viewed from the eastward it will appear rocky, and bare of all vegetation except a very scanty growth of stunted fir near its eastern and western ends. It lies nearly **NW.** and **SE.**, and is about five-eighths of a mile long.

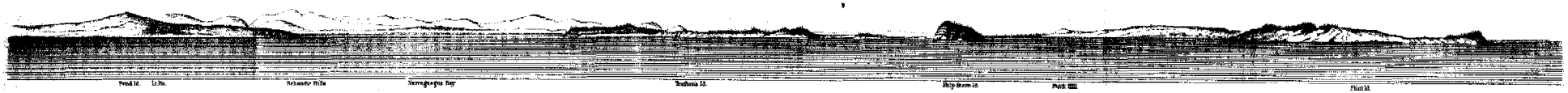
Flint Island.

On its western side, and close to it, will be seen Ship-Stern Island, which, when viewed from the southeastward, shows as a high, bluff, rocky head, with a thick growth of trees covering its summit. On its southwestern end the rocks are stratified horizontally with black and brown strata, and this appearance, together with the shape of the point, (somewhat like the stern of an old-fashioned ship,) has given the name to the island.

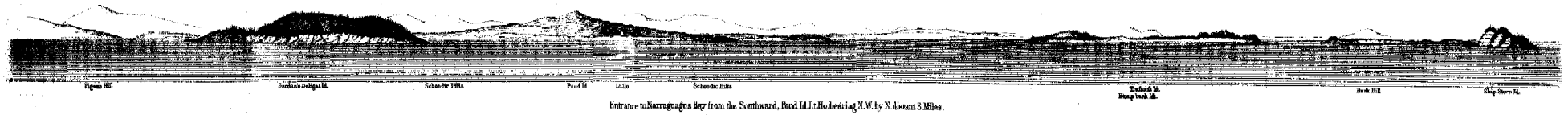
Ship-Stern Island.

On the western side of the entrance, about seven-eighths of a mile **S.** from Pond Island, lies Jordan's Delight, a rocky islet of moderate height, entirely covered with a dense growth of black-looking trees, and a quarter of a mile long **NE.** and **SW.** There is a passage between it and Pond Island, but it is not recommended to strangers. To the southward of this islet lies *Jordan's Delight Ledge,* marked by a red spar-buoy; but there is no passage between the two.

Jordan's Delight.



Entrance to Narraguagus Bay from the Eastward, Pond Id. Lt. Ho. bearing N.W.¼ W. distant 3¼ Miles.



Entrance to Narraguagus Bay from the Southward, Pond Id. Lt. Ho. bearing N.W. by N. distant 3 Miles.

When hauling to the northward to enter the bay, after passing Ship-Stern Island, there will be seen ahead, and about a mile and a quarter distant, a large, rocky and wooded island exactly in the middle of the bay. This is Trafton's Island, about a mile to the northward of Ship-Stern Island, and the same distance **NE.** by **N.** from the northern end of Pond Island. It shows steep, rocky faces, crowned with a dense growth of trees at the eastern and western ends, but bare in the middle, where peculiar-looking white rocks appear. Trafton's Island lies nearly **E.** and **W.**, and is about half a mile long. It is distant from Dyer's Island a little over half a mile, and from the mainland on the western shore of the bay three-quarters of a mile;—the centre of the island lying almost exactly in the middle of the bay. Close to it, off its southeastern point, there is a low islet, composed of red rocks, crowned with spruce and fir, having no name. **Trafton's Island.**

Dyer's Island, on the eastern side of the bay, is that long, high island a quarter of a mile to the northward of Flint Island. It extends about two miles nearly **N.** and **S.**, and, seen from the southward and westward, appears as a rocky island of considerable height,—its shores being mostly wooded, but occasionally bare. There are only two or three settlers,—most of the island being rocky and barren. **Dyer's Island.**

The western shores of Narraguagus Bay are formed by the mainland of the township of **Millbridge**, which extends to the southward as a long, narrow peninsula, separating this bay from Pigeon Hill Bay to the westward, and terminates in Joe Dyer's Point. This, when viewed from Narraguagus Bay, will appear low, rocky, and covered with a growth of fir and spruce. It is a mile to the westward of Pond Island, but the passage between them is studded with islets, prominent among which are the **Horse Heads** and the **Douglass Islands.** There are good passages among these islands, but strangers should not attempt them. **Joe Dyer's Point.**

To the northward of Joe Dyer's Point the western shore, to Chitman's Point, is low and covered with a dense growth of low fir trees.

Chitman's Point is nearly two miles above Joe Dyer's, and nearly opposite to, but a little above, Trafton's Island. There is a large smoke-house on the shore, and back of this the land is low, rocky and thickly wooded. A small, narrow cove, bare at low water, and called **Chitman's Cove**, makes in behind it to the southward. **Chitman's Point.**

About three-quarters of a mile above Chitman's Point is Buchanan's Point, also on the western shore. It is low and rocky, and its top is covered with patches of grass and bushes. Passing to the northward of it you will open a small stream, called **Buchanan's Creek**, nearly dry at low water. High, rocky banks rise behind it, and on its northern side are level, cultivated fields,—the settled lands beginning here. Half a mile above Buchanan's Point a long wharf will be seen on the western shore. This is the **Steamboat Wharf**, used by the coastwise steamers when the state of the tide will not permit them to reach Millbridge;—communication being had under such circumstances by means of a small steamer of light draught. On the shore at the head of the wharf there is a large lobster-packing house. It is best for strangers to anchor off this wharf, unless of large draught, when the best anchorage is under the northern side of Trafton's Island, in from three to five fathoms, soft bottom. **Buchanan's Point.**

On the eastern side of the bay, and about a quarter of a mile above Dyer's Island, lies Foster's Island, a mile and a half long, and extending about **N.** by **E.** and **S.** by **W.** Its southern end will appear low, and has a thick growth of trees to within a few hundred yards of the point. Beyond this the shore rises, and is partly bare and partly wooded with scrub. The northern end of the island is quite low, and thicky wooded to the water with a variety of trees. **Foster's Island.**

The passage between Foster's and Dyer's islands is the one commonly used by the coast steamers when leaving the bay bound to the eastward, or coming in to it from that direction. It is called **Dyer's Island Narrows**, has twelve to fifteen feet at low water, and is buoyed.

Patterson's Point, or **Fickett's Point**, as it is sometimes called, lying at the head of the bay and on the eastern side of the entrance to **Narraguagus River**, is two miles and a half to the northward of Trafton's Island and nearly three-quarters of a mile above the Steamboat Wharf; and is of moderate height, level and grassy, with spruce and fir trees dotting its surface at intervals. On the eastern side of this point, between it and Foster's Island, spreads the **Eastern Branch** of the bay, which leads to Back and Flat bays and Harrington River; but this passage is very shallow and unfit for strangers. **Patterson's Point.**

On the western shore, above the Steamboat Wharf, the banks are of moderate height, with grassy tops;—the land being mostly under fine cultivation and well settled. There are sandy and clay cliffs in many places, worn by the action of the water; and where the lands have not been cleared the woods are very thick.

On the eastern bank of the river, above Patterson's Point, the shore, during the summer, presents a beautiful appearance,—being mostly smooth, level grass-land, dotted with trees like a park, and well settled. The town of **Millbridge** is built upon the western bank, a mile and a half above Patterson's Point and four miles and three-quarters above Pond Island. It is situated on a flat, grassy plain, elevated about twenty feet above the tide,—the banks having precipitous, sandy faces. It is a beautiful and thriving village, with considerable lumber trade and some ship-building interest. Wood, water and fresh provisions can always be obtained, and at cheap rates. Water may also be obtained at the Steamboat Wharf, at Patterson's Point, (where a brook of excellent water flows into the river,) and about half a mile below the town, on the western shore, where there is another brook. Information of these places can always be obtained from the inhabitants.

DANGERS

IN APPROACHING AND ENTERING NARRAGUAGUS BAY.

I. ***Coming from the Eastward.***—In approaching this harbor from the eastward the first danger met with, after passing the whistling-buoy off Head Harbor, will be found on the course towards Petit Manan Light-house, and is known as Tibbetts' Rock. It was lately reported to Lieutenant Commander Theodore F. Jewell, U. S. N., Assistant Coast Survey, by Captain Stillman Ray; and the former gentleman made an examination of it, finding fifteen feet at mean low water. There is, however, said to be *only four feet* close to the fifteen feet spot. This dangerous ledge, which is not buoyed, bears from

Tibbetts' Rock.

	Miles.
Petit Manan Light-house, E. ¼ N.	3½
Nash's Island Light-house, SW. ¾ S.	5
Southeast Rock, NE. ¾ N.	3½

A buoy will be recommended on this rock. To avoid it, when standing towards Petit Manan do not go to the southward of Petit Manan Light-house bearing **W. ¾ S.**

When nearly up with the northern end of Pond Island, look out for Pond Island Ledge, which makes off from the northern end of Pond Island, and has three feet on it at lowest tides. A black spar-buoy, marked No. 1, and placed on its northern end, will be seen on approaching the island. It is in fourteen feet water, and must be left to the westward. Passing it and coming up with Trafton's Island, there will be seen well to the eastward, and off the northern end of that island, the red spindle on *Trafton's Island Ledge*, lying off the northeastern end of the island, and dry at half-tide. It is not in the way of a vessel bound in or out with a fair wind. The spindle is placed on the ledge, and is surmounted by a wheel. Vessels bound to Millbridge pass to the westward of it.

Pond Island Ledge.

Lower Middle Ground.

Passing Trafton's Island, a black spar-buoy will be seen nearly a mile ahead, on the Lower Middle Ground, lying off the western shore. The buoy is marked No. 3, and is placed in fourteen feet off the eastern end of the shoal, and about a quarter of a mile from shore. It must be left to the westward; and when past it, a red spar-buoy will be seen some distance ahead, on the lower end of Upper Middle Ground, lying on the eastern side of the channel, about three-quarters of a mile above the Lower Middle. The buoy is in seven feet at mean low water, is marked No. 2, and must be left to the eastward.

Upper Middle Ground.

Passing this buoy, there will be seen ahead, but nearest to the western shore, the black spar-buoy on Long Point Ledge, making off from **Long Point**, on the western shore, a little over a hundred yards, and dry at low water. The buoy is marked No. 5, placed on the eastern end of the ledge in seven feet at mean low water, and must be left to the westward.

Long Point Ledge.

When abreast of the Steamboat Wharf a red spar-buoy will be seen ahead, on the eastern side. This is on Dyer's Island Ledge, lying off the northern end of Dyer's Island, about **W. ½ N.** from the southern end of Foster's Island, and has five feet at lowest tides. The buoy is marked No. 2, is placed on the northwestern side of the ledge in ten feet water, and must be left to the eastward going to or coming from Millbridge, and to the southward if bound out by the Eastern Passage or Dyer's Island Narrows.

Dyer's Island Ledge.

The flats off Patterson's Point are marked by a fish-weir, extending to the edge of the channel. You may pass close to the weir,—that is, within fifty yards,—with two fathoms water. When abreast of this point there will be seen, about half a mile ahead, the red spindle on Half-Tide Ledge, lying on the eastern side of the channel and about three hundred yards from shore. The ledge is bare at half-tide, and there is no passage inside of it; and the spindle, which is of iron, surmounted by a cage, is to be left to the eastward.

Half-Tide Ledge.

Above Half-Tide Ledge *the flats extend out from both shores*, and at low water the channel is easily traced, as the flats are nearly all bare. Nine feet at low water may be taken up to Patterson's Point, and seven feet to Millbridge.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING NARRAGUAGUS BAY.

I. ***Coming from the Eastward.***—Pass half a mile to the southward of Nash's Island, and steer for Pond Island Light-house until within half a mile of the island and the town opens to the westward of Trafton's Island. Then steer **NW. by N.** past Trafton's Island, gradually altering the course to the northward so as to give the island a berth to the eastward of a quarter of a mile. When up with the northern end of the island, steer **N. by E. ½ E.** for the black buoy on the Lower Middle Ground; and when abreast of this, steer **N.** half a mile, and then **N. by W. ½ W. Nearly**, for the

Steamboat Wharf. This clears the red buoy on the southern end of the Upper Middle Ground; and when abreast of it you must steer **N.** by **E.** **Nearly,** for the black buoy on Long Point Ledge. Passing to the eastward of this, continue the course until up with the red buoy on Dyer's Island Ledge, when steer **N.** up the middle of the river. Vessels drawing eight feet should anchor off the fish-weir at Patterson's Point, and all strangers should anchor under the northern side of Trafton's Island or off the Steamboat Wharf, and take a pilot for Mill-bridge. There is good anchorage for large vessels under Trafton's Island in from three to five fathoms. ***Sailing Directions--Narraguagus Bay.***

The above courses take twelve feet at low water up to the Steamboat Wharf and nine feet up to Patterson's Point. They pass to the eastward of Pond Island Ledge; well to the westward of Trafton's Island Ledge; to the eastward of Lower Middle Ground; to the westward of Upper Middle Ground; to the eastward of Long Point Ledge; and to the westward of Half-Tide Ledge.

DANGERS

IN APPROACHING AND ENTERING NARRAGUAGUS BAY.

II. ***By the Eastern Passage, or Dyer's Island Narrows, between Dyer's Island and Strout's Island.***—As before mentioned, (on page 91,) this passage is used by the coasting steamers in entering Narraguagus Bay from the eastward, and in leaving it bound to the eastward. The usual course is to come through Tabbott's Narrows, pass to the southward of Norton's Island, and then, turning to the northward, pass between Dyer's and Strout's islands, and thence between Dyer's and Foster's islands into Narraguagus Bay. The passage is not fit for sailing-vessels unless with the winds between **E.** and **S.** if bound in, and between **W.** and **N.** if bound out; but twelve feet at mean low water may be carried through it into the bay.

After passing Tabbott's Narrows there will be seen ahead, a little to the northward of the course, a large black spindle on Norton's Reef, or *Norton's Ledge*, as it is sometimes called, making out in a southwesterly direction from Norton's Island, and nearly all bare at half ebb. The spindle is on its southern end, is composed of an iron tripod, and is to be left to the northward. ***Norton's Reef.***

After passing Norton's Reef the course leads over towards Dyer's Island and along its eastern shore; and the first danger encountered will be *Dyer's Island Eastern Ledge*, lying off the eastern shore of that island,—a long reef, extending **N.** and **S.**, breaking heavily at half-tide, and marked by a red spar-buoy, (No. 4.) After passing it, the next danger met with is Strout's Island Ledges, or *Middle Ledges*, as they are sometimes called, lying on the eastern side of the passage, about a quarter of a mile from the southeastern end of Strout's Island, bare at half-tide, and about a quarter of a mile long in a **N.** and **S.** direction. They are not buoyed, but are always visible. The course in passes to the westward of them. When past them, there are no dangers until the passage between Foster's and Dyer's islands is open, in which will be seen a red spindle and spar-buoy. The spindle is on *North Point Ledge*, or *Half-Tide Ledge*, a long reef, lying off the northern end of Dyer's Island and on the southern side of this passage. The buoy is on the northern extremity of the same reef, but the spindle is on the dry part. Vessels must not attempt to pass between them, but must keep to the northward of the buoy. When up with it, the red spar-buoy on Dyer's Island Ledge will be seen a short distance ahead. This ledge has seven feet at mean low water, and lies off the northern end of Dyer's Island, a little to the westward of North Point Ledge. The buoy is marked No. 2, and is placed on the northwestern side of the ledge. It must be left to the southward, and the course shaped for a black nun-buoy (No 1) placed on the southern side of a seven feet ledge, called *North Ledge*, which is in Narraguagus Bay. When up with this buoy, steer about **N.** up the middle of the river. (See sailing directions on preceding page.) ***Strout's Island Ledges.*** ***Dyer's Island Ledge.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING NARRAGUAGUS BAY.

II. ***By the Eastern Passage or Dyer's Island Narrows, between Dyer's Island and Strout's Island.***—After passing through Tabbott's Narrows, steer **W.** ½ **N.** to clear Norton's Reef spindle, and when past it bring Nash's Island to bear **SE.** by **S.** and steer **NW.** by **N.**, between Dyer's Island and Strout's Island, passing to the westward of the ledges off the latter and to the eastward of those off the former island. When the passage between Foster's and Dyer's islands is open, bring the red spindle to bear **W.** by **S.**, and steer **W.** ½ **S.** so as to leave the spar-buoy near the spindle to the southward. When past this buoy steer **W.** by **S.**, which will lead up with the red can-buoy in Narraguagus Bay, when you must follow the sailing directions for the bay and river previously given.

Through this passage not less than twelve feet at low water can be carried.

DANGERS

IN APPROACHING AND ENTERING NARRAGUAGUS BAY.

III. *Coming from the Westward.*—About seven miles and a half **SW.** ¾ **W.** from Nash's Island Light-house, and fifteen miles **W.** ¾ **S.** from Moos-a-bec or Head Harbor Light-house, lies Petit Manan Island. From Baker's Island, off Mount Desert, it bears **E.** by **N.** ½ **N.**, distant a little over sixteen miles, and from Mount Desert Rock **NE.** ¼ **N.**, distant twenty-six miles. It is a group of low, rocky islets, destitute of vegetation, and surrounded by dangerous shoals. They lie **NW.** and **SE.**, and exactly off the western entrance to Pigeon Hill Bay; and on the southernmost is built the light-house;—appearing, when viewed from the westward, as a very tall tower with a group of houses at its base. This light-house is a granite tower one hundred and nine feet high, connected with the keeper's dwelling, which is close to it and is painted drab. The tower shows a fixed white light, of the second order of Fresnel, *varied by flashes* at intervals of two minutes, from a height of one hundred and twenty-five feet above sea-level; and in ordinary weather is visible seventeen miles. Its geographical position is

Petit Manan Island.

Petit Manan Light-house.

Latitude	**44° 22′ 2″ N.**
Longitude	**67° 51′ 51″ W.**

There is at Petit Manan Light-house a steam fog-whistle ten inches in diameter, in duplicate, which gives two blasts of five seconds' duration every minute,—the intervals between the blasts being eight and forty-two seconds respectively.

Fog-signal.

Another dwelling-house, painted cream-color, stands about one hundred and fifty feet to the westward of the tower; and the fog-signal houses, which are white, about sixty yards to the southwestward, and on the southern extremity of the island.

Petit Manan Island is surrounded by dangerous ledges and shoals at distances varying from two to five miles. On its northern side lie the two shoals known as *Inner Bar* and *Outer Bar*. On its western and southern sides are several detached rocks, very dangerous to navigation, but all of them marked by large buoys. Of these, the first one met with in approaching the island and bound into Narraguagus Bay is known as Moulton's Ledge, lying three miles **W.** by **N.** from Petit Manan Light-house, bare at low water, and extending in a **NE.** and **SW.** direction about one hundred yards, with soundings of between three and five fathoms extending half a mile to the southward from the bare ledge. A spar-buoy, painted red and black in horizontal stripes, is placed in five fathoms about one hundred yards to the southwestward of the ledge, and must be left to the northward.

Moulton's Ledge.

Vessels bound to the eastward or westward may go within from three-quarters to half a mile of Petit Manan Island with not less than four fathoms; in which case, after passing Moulton's Ledge, the first danger met with will be Petit Manan Reef. This ledge makes off from the island in a southerly direction, is about half a mile long, and marked by a second-class iron can-buoy (No. 1) painted black. The buoy is on the southern end of the ledge in seven and a half fathoms, and is to be left to the northward by vessels using this passage; but it is better for strangers to keep to the southward, outside of all these dangers.

Petit Manan Reef.

Simms' Rock, a dangerous ledge, having six or seven feet at low water, lies two miles **S.** ½ **E.** from Petit Manan Light-house, and has from six to eight fathoms water all around it; while the channel between it and Petit Manan Reef is about a mile wide, and has not less than six fathoms water. This rock is marked by a spar-buoy, painted red and black in horizontal stripes, placed on the northeastern side of the rock in eight fathoms water, marking the southern side of the channel between this ledge and Petit Manan Reef. Vessels using this passage pass to the northward of it.

Simms' Rock.

Southeast Rock is the outermost of the rocks to the southward of Petit Manan, from which it is distant four miles in a **S.** by **E.** direction. It has seven feet at lowest tides, and is marked by an iron can-buoy of the second class, painted red and black in horizontal stripes, and placed in eight fathoms on the northern side of the ledge. This buoy must be left to the southward;—or if passing to the southward of it, it must receive a berth of one-third of a mile.

Southeast Rock.

When past Southeast Rock, the next danger met with will be Jackson's Ledge, which is not, however, in the way of vessels using this channel unless they are beating to windward. It lies on the eastern side of the passage, about four miles **E.** ¼ **N.** from Petit Manan Light-house, and a little over three miles to the southward of Jordan's Delight, having twelve feet at mean low water and nine feet at lowest tides, and is marked by a red and black nun-buoy placed on its northern side, which is to be left to the southward.

Jackson's Ledge.

Dave Leighton's Ground.

Dave Leighton's Ground, said to lie a mile and a half to the westward of Jackson's Ledge, is also left to the southward by vessels using this passage to Narraguagus. It is reported to have eighteen feet upon it, and to bear from the southeastern end of

Boisbubert Island SE. by S. ½ S., two miles distant, and from Petit Manan Light-house NE. by E. ⅛ E., two miles and a half distant. A buoy has been recommended to mark this shoal ground.

Tibbetts' Rock, already described on page 92, is said to have four feet upon it, and is about half a mile to the westward of Jackson's Ledge. Lieutenant Commander Jewell describes it as not very large, "but steep-to on its northeastern side—the water deepening to sixteen fathoms within fifty feet of its shoalest part. The depth of water increases less abruptly on the southern and southwestern sides; but twenty fathoms may be found within half a mile." ***Tibbetts' Rock.***

"This rock lies nearly in the track of vessels bound into Moos-a-bec Reach from the westward," and bears from

	Miles.
Petit Manan Light-house, E. ¼ N.	3½
Nash's Island Light-house, SW. ¾ S.	5
Southeast Rock, NE. ¾ N.	3½

A buoy will be recommended on this rock.

Egg Rock, lying on the western side of this channel, off the entrance to Pigeon Hill Bay, is not in the way of vessels bound into Narraguagus unless they are beating in. It is simply a bare, rocky islet, destitute of vegetation, and about ten feet high, and lies three-quarters of a mile to the southward of Little Boisbubert Island and a little over two miles to the northward of Petit Manan Light-house. From Jackson's Ledge it bears NW. by W. ¾ W., distant about three miles and a half. ***Egg Rock.***

One-third of a mile S SW. from Egg Rock lies *The Whale*, bare at one-third ebb. It is not in the way of vessels using this passage; but those who pass on the northern side of Petit Manan must beware of it.

When within about a mile and a half of Jordan's Delight, there will be seen a red spar-buoy ahead, which is on Jordan's Delight Ledge, formed by a line of reefs about a mile long, extending to the southward from the island. The rocks are all under water, and it is not safe to attempt to pass between them and the island. Jordan's Delight, as already mentioned, (page 90,) is a rocky islet of moderate height, entirely covered with a dense growth of black-looking trees, and is seven-eighths of a mile S. from Pond Island. The buoy, which is marked No. 2, is placed in seven fathoms on the southwestern side of the ledge, and is to be left to the eastward by vessels using this passage; or it may be left to the northward by rounding Pond Island, (leaving it to the westward,) and thus entering the bay. It is customary, however, coming from the westward, to pass to the northward of Jordan's Delight,—between it and Pond Island. In so doing, the next danger met with will be Pond Island Ledge, lying off the northern end of Pond Island, having three feet on it at lowest tides. A black spar-buoy, (No. 1,) which will be seen as soon as the northern end of the island is approached, is placed in fourteen feet water off its northern end, and must be left to the westward. Passing it and coming up with Trafton's Island, there will be seen well to the eastward, and off the northern end of that island, a red spindle. This is on Trafton's Island Ledge, lying off the northeastern end of the island, and dry at half-tide. It is not in the way of a vessel bound in or out with a fair wind. The spindle is *on* the ledge, in fourteen feet water, is surmounted by a wheel, and must be left to the eastward. There is good anchorage under the northern shores of Trafton's Island in from three to five fathoms, and strangers can anchor here and take a pilot for Millbridge. ***Jordan's Delight Ledge.*** ***Pond Island Ledge.*** ***Trafton's Island Ledge.***

The eastern and western channels unite at this point. (For description of dangers and sailing directions, see page 92.)

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING NARRAGUAGUS BAY.

III. ***Coming from the Westward.***—1. ***Between Petit Manan Reef and Simms' Rock:*** Give the light-house a berth of three-quarters of a mile, passing a quarter of a mile S. of the black buoy on the reef, and when the former bears NW. by N. ¼ N., steer N. by E. ¾ E. for Pond Island Light-house. When within half a mile of the latter, haul to the eastward around the island, keeping half a mile from it; and when the southeastern point of Pond Island bears W., steer NW. by N. past Trafton's Island, gradually altering that course to the northward so as to give the island a berth to the eastward of a quarter of a mile. When up with the northern end of the island, haul to the eastward, (keeping the same distance from shore,) and anchor under its northern shore; but if bound up, steer N. by E. ½ E. towards the Lower Middle Ground, and follow the directions given for Narraguagus Bay. (See page 92.)

Sailing Directions--Narraguagus Bay.

The above courses lead a quarter of a mile to the southward of Petit Manan Reef; a little over a mile to the northward of Simms' Rock; seven-eighths of a mile to the eastward of The Whale; the same distance to the westward of the reported position of Dave Leighton's Ground; and a mile and a quarter to the westward of Jordan's Delight Ledge.

2. ***Between Simms' Rock and Southeast Rock:*** Give Petit Manan Light-house a berth to the northward of about three miles; and, in passing it, the red and black can-buoy on Southeast Rock should be seen in any ordinary weather about a mile to the southward of the course, and the red and black spar-buoy on Simms' Rock the same distance to the northward. As soon as past the range of Simms' Rock buoy and Petit Manan Light-house, and Pond Island Light-house bears **N.** by **E.** $\frac{1}{8}$ **E.**, steer that course until within half a mile of the island, when haul to the eastward around it, and proceed as before directed.

The above courses pass about a mile to the southward of Simms' Rock, and nearly half a mile to the eastward of it; about a mile to the northward of Southeast Rock; about five-eighths of a mile to the westward of Dave Leighton's Ground; a mile and five-eighths to the westward of Tibbetts' Rock; about a mile to the eastward of The Whale; and about a mile and a quarter to the westward of Jordan's Delight Ledge.

3. ***To pass Outside or to the Southward of all the ledges off Petit Manan and enter Narraguagus Bay:*** Do not approach Petit Manan Light-house nearer than five miles until to the eastward of the light bearing **N.** by **W.**; and when Pond Island Light-house bears **N.** $\frac{3}{4}$ **E.** steer for it until within half a mile of it, when haul to the eastward, and proceed as before directed.

These courses pass about a mile to the southward of Southeast Rock; about a quarter of a mile to the westward of Dave Leighton's Ground; a mile and quarter to the westward of Tibbetts' Rock; a mile and a quarter to the eastward of The Whale; and a mile to the westward of Jordan's Delight Ledge.

4. ***To pass to the Southward of Jordan's Delight and enter Narraguagus Bay:*** Having come by the most frequently-used passage, (that between Petit Manan Reef and Simms' Rock,) when Pond Island Light-house bears **N.** by **E.** $\frac{3}{4}$ **E.**, steer for it until Petit Manan Light-house bears **SW.** $\frac{3}{4}$ **W.**, when steer **NE.** $\frac{3}{4}$ **E. Nearly**, for Nash's Island Light-house, keeping Petit Manan over the stern. When past Jordan's Delight, and Pond Island Light-house opens to the eastward, steer **N.** by **W.**, keeping about half a mile from the Pond Island shore and a quarter of a mile from Trafton's Island shore. When up with the northern end of the latter, steer **N.** by **E.** $\frac{1}{2}$ **E.** towards Lower Middle Ground buoy, and proceed as directed for Narraguagus Bay. (See page 92.)

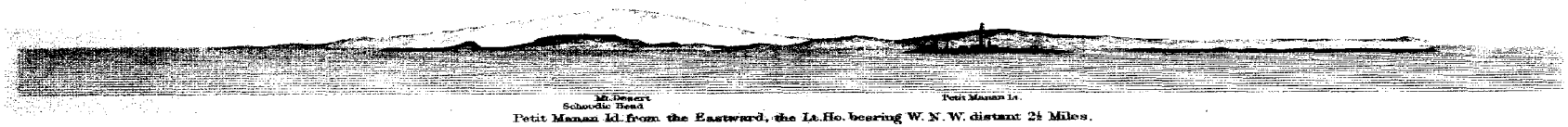
The above courses pass a quarter of a mile to the southward of Petit Manan Reef; a mile to the northward of Simms' Rock; nearly three-eighths of a mile to the northward of the reported position of Dave Leighton's Ground; and a quarter of a mile to the southward of Jordan's Delight Ledge.

IV. ***To cross Petit Manan Outer Bar and enter Narraguagus Bay.***—Between Petit Manan Island and Petit Manan Point (two miles and a half to the northward of it) the water is all shoal. Two passages across these shoals—the northern one with seven feet at lowest tides, and the southern one with ten feet—are called, respectively, Inner and Outer Bar. **The Inner Bar Passage** is not safe for strangers, and is not buoyed. **The Outer Bar Passage** has a spar-buoy, and is used by the coast steamers and such coasters as are familiar with the dangers of these inshore passages. The buoy is a spar, thirty-five feet long, painted black and white, and is placed in two fathoms in the middle of the channel. In 1872 this buoy was about sixty yards too far to the westward, and if it has not yet been shifted vessels should be careful not to run directly for it, as they might strike on the southern point of the shoal.

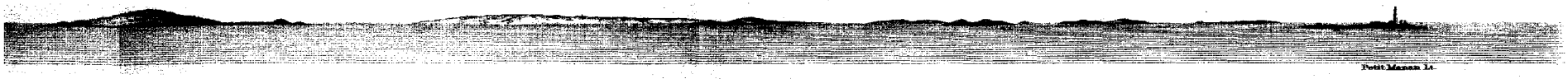
In coming from the westward to cross Outer Bar, give Petit Manan Light-house a berth to the southward of about a mile; bring Ship-Stern Island about a handspike's length open to the northward of Jordan's Delight, (on a bearing of nearly **NE.**,) and steer in on that range, which will lead safely over the bar in the best water.

This is the pilots' range for crossing, as the buoy is frequently carried away and oftener out of position. If the range cannot be seen and the buoy is gone, the bar should not be crossed, and *can never be crossed in heavy weather*, as it breaks heavily from Petit Manan Point out to the island.

As a rule, strangers should not attempt to cross Petit Manan Bar, but should pass to the southward of the island. The reefs between the island and the point are very dangerous, and should be crossed only in smooth weather and with an experienced pilot.



Petit Manan Id. from the Eastward, the Lt.Ho. bearing W. N. W. distant 2¼ Miles.



Petit Manan Id. from the Westward, the Lt.Ho. bearing N.E. by E. distant 3¼ Miles.

LIGHT-HOUSES.

NAME.	Latitude N.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		m.	Feet.	
Narraguagus Light-house	44 27 20	67 49 52	4 31 19.5	Fixed.	.....	45	12
Petit Manan Light-house	44 22 2	67 51 '51	4 31 27.4	F. V. F.	2	125	17

VARIATION OF THE COMPASS.

The approximate magnetic variation for the year 1879 is **16° 34′ W.**, with an approximate annual increase of **2′**.

LIFE-SAVING STATION.

It is the intention of the United States Government (1878) to establish a life-saving station on Petit Manan Island, provided with boats, cars and other apparatus for rescuing the shipwrecked, and for the comfort and shelter of such as shall have been saved.

ICE IN NARRAGUAGUS BAY.

Ice forms in this bay and in Narraguagus River and Dyer's Island Narrows about the same time and in the same manner as in Machias and Englishman's bays;—commencing about the middle of December, and continuing to form a more or less formidable obstacle to navigation until March. (See also pages 60 and 63.) The ice is mostly of local formation, except during severe winters, when a field of harbor ice and floes from outside is massed together and frozen, completely shutting off all approach to the bay, and extending several miles outside of Jordan's Delight.

Winds have little influence in preventing or assisting local formations, nor have the tides; but both assist in bringing in drift-ice from outside, and in carrying it off when the mass is broken up. Calms and light winds from the northward and westward are favorable to a rapid increase in the local formations; while strong winds break them up and drive them ashore on the lee side of the bay;—thus blocking up the harbors on that side. In severe winters Narraguagus Bay is dangerous to navigate from December to April, and wholly closed from the middle of January to the first of March.

Winds from **SW.** around by **S.** to **SE.** and thence to **NE.** have a tendency to break up the ice; when it goes to sea with the ebb, assisted by the wind if anywhere to the northward of **E.** Southerly winds, being almost always accompanied by a heavy sea and a rise in the temperature, do more than any others to break up the "field;" but in such case it is apt to come in again on the flood as "drift;" and should a cold snap occur, will freeze together again and close the bay.

PIGEON HILL BAY,

sometimes called **Boisbubert Harbor**, lies just to the westward of Narraguagus Bay, from which it is separated by the long peninsula of the mainland which terminates in Joe Dyer's Point. It is naturally divided into two parts,—the **Northern** or **Inner Bay**, which is bounded on the north and west by the township of **Steuben**, on the east by the township of **Millbridge**, and on the south by Boisbubert Island, (pronounced "Bowbear;") and the **Southern** or **Outer Bay**, which is contained between Boisbubert Island on the east and Petit Manan Point on the west. The general course of the Outer Bay is **NNE.** for about three miles and a quarter, and that of the Inner Bay is about **N. ¼ W.** for a little over two miles. The latter is very shallow.

Pigeon Hill Bay is of little commercial importance;—there being some fishing interest, but no other trade. It is useful as a harbor of refuge, but is somewhat dangerous to approach on account of the Petit Manan Bars (which close the western entrance to vessels of large draught) and the ledges and shoals which obstruct the passage from the eastward. In case of necessity, however, it may be safely entered from the eastward by large vessels if the directions hereinafter given be carefully followed.

In approaching Pigeon Hill Bay either from the eastward or westward, the most prominent object visible will be **Pigeon Hill**, (whence the bay takes its name,) which will appear as a high, round hill of regular shape, covered only with bushes, entirely destitute of trees, and about five hundred feet high. The hill rises from Petit Manan Neck about three miles above the point, and there is at present a large tripod and a staff on its summit, (marking the site of one of the Coast Survey stations,) which is visible several miles.

Petit Manan Island.

Petit Manan Island, lying off the middle of the entrance, nearly two miles to the southward and eastward of Petit Manan Point, has been already described (on page 94) as a group of low, rocky islets, lying in a line nearly **NW.** and **SE.**, destitute of vegetation, and most of them connected at low water. On the southernmost and largest islet is built the light-house, which appears, when viewed from either the eastward or westward, as a very tall, grey tower, with a group of low houses at its base. Petit Manan Island bears from

	Miles.
Nash's Island Light-house, SW. ¾ S. ..... **about**	7¼
Moos-a-bec or Head Harbor Light-house, W. ¾ S.	15
Baker's Island (off Mount Desert,) E. by N. ¼ N. ..... **a little over**	16
Mount Desert Rock, NE. ¼ N.	26

It is surrounded by very dangerous ledges and shoals, so that strangers should not approach it from the southward nearer than five miles, and cannot go inside of it at all.

Petit Manan Light-house.

Petit Manan Light-house is a sea-coast light—that is, it is intended not only as a guide to the harbors of Pigeon Hill Bay and Narraguagus, but also as a landmark for vessels passing along the coast. It is situated on the southern end of the southernmost islet of the group, and is a granite tower one hundred and nine feet high, connected with the keeper's dwelling, which is painted drab. Another dwelling, painted cream-color, is seen about fifty yards to the westward, and two fog-signal houses sixty yards to the southwestward of the tower. The light is fixed white, (varied by flashes at intervals of two minutes,) of the second order of Fresnel, and, in ordinary weather, is visible seventeen miles. Its geographical position is

Latitude ..... **44° 22′ 2″ N.**
Longitude ..... **67° 51′ 51″ W.**

Fog-signal.

There is at Petit Manan Light-house a steam fog-whistle, in duplicate, ten inches in diameter, which gives two blasts of five seconds' duration every minute. Between the blasts are silent intervals of eight and forty-two seconds, respectively. This signal is especially useful to mariners on account of the dense and long-continued fogs so frequent in this vicinity, sometimes lasting three weeks without intermission.

Passing Petit Manan, we come next to **Egg Rock**, lying nearly in the middle of the entrance, two miles and an eighth to the northward of Petit Manan Light-house and one mile to the southward of Boisbubert. It is a bare, rocky islet, about ten feet high, entirely destitute of vegetation. One-third of a mile **S SW.** from it lies *The Whale*, bare at one-third ebb, and breaking constantly.

Petit Manan Point.

Nearly opposite to Egg Rock, on the western side of the entrance to Pigeon Hill Bay, is Petit **Manan Point**, forming the western point of entrance to the bay and separating it from Dyer's Bay. It is the southern extremity of **Petit Manan Neck**, which forms the western shore of Pigeon Hill Bay, and is long, low, rocky, and covered with a growth of stunted fir and spruce. At low water it extends out into a long, bare ledge, close around which leads the channel across Inner Bar, which is good for seven feet at lowest tides.

A little more than three-quarters of a mile above Petit Manan Point, on the western side of the bay, is **Woods Pond Point**, low and rocky, with a crown of stunted fir and spruce. The most of this western shore is rocky and has a forbidding aspect; for, although the soil is fertile, there is very little of it, and the settlements are few and gradually diminishing. Back of the shore-line the land rises to a considerable height near the ridge of the neck, and there are several houses on the summit and slopes.

Boisbubert Island.

On the eastern side of the entrance, and a little above Woods Pond Point, begins Boisbubert Island, (pronounced "Bow-bear,") forming the eastern shore of Outer Bay. It lies **N.** and **S.**, is two miles and a quarter long, with an average width of three-quarters of a mile; and, seen from the eastward or southeastward, presents an extremely desolate appearance,—showing a bare, white, rocky surface of considerable height, without a vestige of grass or trees, and sloping gradually to the edge of the water. On approaching its northern point it will be seen to be low, and composed altogether of bare rocks, upon which is a group of small houses surrounding a flag-staff. The western shore has some thin patches of soil and is thinly settled; while on the southern shore there is a large cove, called **Little Boisbubert Harbor**, which affords anchorage for vessels of five and six feet draught.

Little Boisbubert Harbor is, however, pretty well open to southerly and southeasterly winds, although somewhat protected from the former by **Little Boisbubert Island**, which lies close in with its southwestern point and on the southwestern side of Little Boisbubert Harbor. It is a rocky islet, about three-eighths of a mile long, lies nearly **NW.** and **SE.**, and is covered with a thick growth of spruce and fir,—standing like a black wall upon it.

The Chair.

On the western shore of the bay, about a mile above Woods Pond Point, there is a rock of peculiar shape, standing alone on the very edge of the shore-line, and called The Chair, from its resemblance to that article. You may go pretty close to it (within one hundred yards) with not less than two fathoms water. The western bank is here all rocky and desolate, and the woods are a very sparse growth of stunted fir and spruce trees.

At Chitman's Point, abreast of Pigeon Hill, and nearly three miles above Woods Pond Point, the bay inclines more to the westward, running nearly **N.** for about two miles to its head.

Chitman's Point.

Chitman's Point, a low, round point, lying at the eastern base of the hill, and having a single house and barn, is nearly level and partly cultivated. The northern end of Boisbubert is exactly opposite to it. Passing this northern end of Boisbubert, (which is low, bare and rocky, as before described,) you will open the Eastern Passage into the bay leading between Joe Dyer's Point and Pond Island. **Joe Dyer's Point** is low and rocky, wooded with spruce and fir, and has a large white house and out-buildings on its western side. Three-quarters of a mile to the northward, and nearly a mile above Boisbubert, lies **Bar Island**, close to the eastern shore. It is oval in shape, about five-eighths of a mile long, lies nearly **N NE.** and **S SW.**, and, seen from the southward, appears very thickly wooded with a variety of trees. There are, however, some small cleared patches on its eastern side. There is no passage at low water to the eastward of Bar Island,—*a bar, dry at three-quarters ebb*, stretching from it to the mainland. At high water seven feet may be taken into the mouth of a long cove or creek making in to the eastward abreast of the northern half of the island, and called **Bobby's Creek.**

The bay is quite shallow on the western side of Bar Island, although much wider than the passage to the eastward. Only a few feet can be taken at low water past the island,—the usual anchorage being just to the southward of Pigeon Hill, so as to shut in the Eastern Passage behind the northern end of Boisbubert.

Currant Island Passage.

The **Eastern Passage**, sometimes called Currant Island Passage, leads, as before mentioned, between Joe Dyer's Point on the west and Pond Island on the east, and between these two is about three-quarters of a mile wide. Its width, however, rapidly diminishes, until, between Joe Dyer's Point and Boisbubert, it is only about eight hundred yards in width. It is studded with islets and full of ledges, and is entirely unsafe for strangers.

Pond Island.

Pond Island, before described, (see page 90,) when viewed from the eastward appears as a very regularly shaped hill, somewhat like Mount Desert, but composed of barren rock, dotted in a few places with trees. Its northern end is seen, however, on approaching it, to be low, level and grassy, and is occupied by a house and a barn with flag-staff near it. From this end *a long ledge, bare at low water*, makes off to the northeastward.

Pond Island Light-house.

Pond Island Light-house, or **Narraguagus Light-house**, (as it is sometimes called to distinguish it from the light at the mouth of the Kennebec River,) is built on the southeastern end of the island, and shows, when viewed from the eastward, as two white objects, like the roofs of houses. The lantern rises from the centre of the dwelling-house, which is of whitewashed brick, and shows a fixed white light, of the fifth order of Fresnel, from a height of forty-five feet above the sea, visible twelve miles. It is a guide to Narraguagus and Pigeon Hill bays.

Currant Island.

On passing the northern point of Pond Island, bound through the Eastern Passage into Pigeon Hill Bay, there will be seen ahead, bearing nearly **W.**, and about seven-eighths of a mile off, a low, rocky islet, called Currant Island, crowned with a grove of stunted fir trees at its northern end, and lying nearly in the middle of the passage, about equally distant from Boisbubert and Joe Dyer's Point. Between the latter and Currant Island will be seen **Big Pea Ledge**, a low, bare, rocky islet, with a smaller one to the northward, called **Little Pea Ledge**. The channel leads between Currant Island and Big Pea Ledge, and has eighteen feet at low water, but is too dangerous for strangers to attempt to enter.

Douglass Islands.

Along the western shore of Pond Island, and between it and Boisbubert Island, lie a number of islets and islands, called the Douglass Islands. They are six in number, rocky, of moderate height and well wooded. Seen from either the southward or northward, the two southernmost of the group present a peculiar appearance, which has given them the name of **The Horse Heads**. There is a depth of from four to eight fathoms in the passages among these islands, and between them and **Pond Island**;—one of the best anchorages on the coast being found between the westernmost of the two largest islands and Pond Island, in eight fathoms water, with good holding-ground, and free from ice in the winter. It is known as **Douglass Island Harbor**, and, in easterly gales, cannot be surpassed as an anchorage,—being easy of access. The shores of Douglass Islands are steep and rocky, and are crowned with a thick growth of spruce and fir.

After passing Currant Island the channel joins the main channel from the southward, which has been before described.

DANGERS

IN APPROACHING AND ENTERING PIGEON HILL BAY BY THE MAIN CHANNEL.

Jackson's Ledge.

I. ***Coming from the Eastward, Outside of Jackson's Ledge.***—Coming from the eastward, you either pass outside of everything; or, coming through Moos-a-bec Reach, pass between Jordan's Delight and Jackson's Ledge. In the former case, the first danger met with on approaching the harbor will be Jackson's Ledge, having twelve feet at mean low water and nine at extreme low tides. It lies **E. ¾ N.** from Petit Manan Light-house, distant four miles; is not buoyed, and must be left well to the northward. When past it, the course leads towards Petit Manan Light-house, and vessels must beware of Tibbetts' Rock, which has four feet at low water and is not buoyed. It bears from

Tibbetts' Rock.

	Miles.
Petit Manan Light-house, E. ¼ N.	3½
Nash's Island Light-house, SW. ¾ S.	5
Southeast Rock, NE. ¾ N.	3½

Egg Rock.

A buoy will be recommended upon this ledge. When near Petit Manan Light-house the course turns to the northwestward towards Petit Manan Point; and there will be seen to the northward of the course, and about a mile and a half off, a bare, low, rocky islet, called Egg Rock. It is about ten feet high, destitute of vegetation, lies about three-quarters of a mile **S.** by **W.** from Little Boisbubert Island, and on its southern side is obstructed by a dangerous ledge, bare at one-third ebb, called *The Whale*. This rock lies about a third of a mile outside of Egg Rock, breaks at high water, and is not buoyed.

There is a narrow channel between Little Boisbubert and Egg Rock by keeping close to the former; but it is not safe for strangers.

About one hundred and fifty yards off Woods Pond Point there *is a rock, out at low water*, which is not buoyed; and half a mile above the point lies *another, out only at extreme low tide*, and a quarter of a mile from shore.

Boisbubert Ledge is on the eastern side of the channel, and lies off the western shore of Boisbubert Island, about three hundred yards from it. It is a detached ledge, bare at half-tide, extends nearly N. and S., and is very bold and steep-to,—the deepest water in the bay being found close to its western side. It is not buoyed. Passing it, the passage is clear until near Chitman's Point, when it will be necessary to keep the Boisbubert shore aboard to avoid the *Lobster Rocks*, bare at extreme low tide, and extending from Chitman's Point nearly two-thirds of the way across the passage,—their eastern end being two hundred and fifty yards from the point. They are dangerous, but are not buoyed.

Boisbubert Ledge.

Off the northern end of Boisbubert extends a line of ledges in about a NNW. direction for two hundred and fifty yards, and bare at low water. To the northernmost rock, which is out at half-tide, the name of *Half-Tide Rock* has been given, which has gradually been extended to the whole line of rocks. As the reef is not buoyed, care must be taken when using the Eastern Passage to avoid them. Coming in by the Main Channel, as soon as you are past Lobster Rocks keep over towards the western shore to avoid Half-Tide Rock. This is the worst part of the channel.

Half-Tide Rocks.

Above this, no detailed description can be given.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PIGEON HILL BAY BY THE MAIN CHANNEL.

I. ***Coming from the Eastward, Outside of Jackson's Ledge.***—When off Head Harbor Light-house, about two miles distant, in thirty-six fathoms water, steer W. ¾ S., with Petit Manan Light-house a little to the southward of the course. On this course, when the light-house bears NW. by W. ¾ W., nearly four miles off, you will be well clear of Jackson's Ledge, and may steer for the light until within three-quarters of a mile, when steer N. by W. ½ W. Nearly, for Woods Pond Point. When past Egg Rock, and within seven hundred yards of the point, steer NNE. until nearly up with Chitman's Point. Give this point a berth to the westward of about three hundred and fifty yards to avoid Lobster Rocks, and when past them, anchor to the northward of the point, opposite to the house on Joe Dyer's Point, in from three to three and a half fathoms, soft bottom. The holding-ground is good and the shelter excellent.

The above courses pass well outside and to the southward of Jackson's Ledge; a quarter of a mile to the westward of The Whale; nearly half a mile to the westward of Egg Rock; about three hundred yards to the westward of Boisbubert Ledge; and one hundred yards to the eastward of Lobster Rocks. They carry nothing less than three fathoms at low water to the anchorage above Chitman's Point.

DANGERS

IN APPROACHING AND ENTERING PIGEON HILL BAY BY THE MAIN CHANNEL.

II. ***Coming from the Eastward, between Jordan's Delight Ledge and Jackson's Ledge.***—Coming from Moos-a-bec Reach, after passing Nash's Island, the first danger met with will be seen to the northwestward, a little over a mile to the southward of Jordan's Delight, and is marked by a red spar-buoy. This is Jordan's Delight Ledge, a line of dangerous sunken rocks extending about S. by E. from the island for over a mile. There is no passage between the buoy and Jordan's Delight,—the whole distance being full of rocks. The buoy is marked No. 2, and placed in five fathoms on the southern side of the ledge. The course passes to the southward and eastward of it; and the next danger is *Dave Leighton's Ground*, lying about two miles SE. by S. ½ S. from the southern point of Boisbubert, and about two miles and a half NE. by E. from Petit Manan Light-house. It is not buoyed.

Jordan's Delight Ledge.

Jackson's Ledge.

The course leads to the southward of Dave Leighton's Ground, between it and Jackson's Ledge, lying on the southern side of this passage, three miles and a quarter S. by E. from Jordan's Delight, and four miles E. ¾ N. from Petit Manan Light-house. It has twelve feet at mean low water and nine at extreme low tides, and is not buoyed; but is left well to the southward by vessels using this passage.

After passing Dave Leighton's Ground, the next danger met with is The Whale, a dangerous ledge, bare at one-third ebb, lying about a third of a mile outside of Egg Rock, and not buoyed. It breaks heavily at high water, and must be left to the eastward.

The Whale.

Egg Rock (before described, pages 95 and 99) is about ten feet high, destitute of vegetation and rocky. It lies about three-quarters of a mile S. by W. from Little Boisbubert, with a narrow channel between them, which is unsafe for strangers.

About one hundred and fifty yards off Woods Pond Point lies *a rock, out at low water*, and not buoyed; and half a mile above, *another, out only at extreme low tides*, and a quarter of a mile from shore.

Boisbubert Ledge and Lobster Rocks have been already described on the preceding page.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PIGEON HILL BAY BY THE MAIN CHANNEL.

II. ***Coming from the Eastward, between Jordan's Delight Ledge and Jackson's Ledge.***—Bring Nash's Island Light-house to bear **NE.** and steer **SW.**, with Petit Manan Light-house a little to the westward, and continue this course until within about two miles of the light and the middle of the southern end of Boisbubert bears **N.** by **W.** $\frac{3}{4}$ **W.**; when you will be clear of Dave Leighton's Ground, and must steer **NW.** by **W.** $\frac{1}{4}$ **W.** for Petit Manan Point until Woods Pond Point bears **N.** by **W.** $\frac{1}{2}$ **W.** Nearly. Now steer for that point until within seven hundred yards, when steer **N NE.**, and follow the directions for the bay previously given. Three and a half fathoms can be carried up to the anchorage above Chitman's Point.

These courses pass three-quarters of a mile to the southward of Jordan's Delight Ledge; about the same distance to the northward of Jackson's Ledge; about half a mile to the southward of Dave Leighton's Ground; about half a mile to the southward of The Whale; half a mile to the westward of Egg Rock; and a quarter of a mile to the eastward of the rock off Woods Pond Point.

This passage is the one commonly used by coasters.

DANGERS

IN APPROACHING AND ENTERING PIGEON HILL BAY.

III. ***Coming from the Westward, Outside of Petit Manan Island.***—The first danger met with, in coming from the westward, bound into Pigeon Hill Bay, is called Moulton's Ledge, and has a red and black spar-buoy off its southwestern end, in five fathoms water. This ledge is bare at low water, lies four miles **W.** by **N.** from Petit Manan Light-house, extends in a **NE.** and **SW.** direction, and is nearly one hundred yards long. From its southern end shoal water (from three to five fathoms) extends half a mile to the southward. The buoy may be left on either hand, but it is usual to leave it to the northward, unless bound across the Inner Bar. ***Moulton's Ledge.***

Passing Moulton's Ledge, look out on the southern side for Southeast Rock, which has seven feet at lowest tides, and eight and ten fathoms on all sides of it. It lies four miles **S.** by **E.** from Petit Manan Light-house, and is marked by an iron can-buoy of the second class, painted red and black in horizontal stripes. The buoy is in eight fathoms water, a little over thirty yards to the northwestward of the ledge. The course leads to the northward of the rock, between it and Petit Manan. ***Southeast Rock.***

Next to the northeastward of Southeast Rock is Tibbetts' Rock, with four feet at lowest tides, and not buoyed. It bears from ***Tibbetts' Rock.***

	Miles.
Petit Manan Light-house, E. $\frac{1}{4}$ **N.**	$3\frac{1}{2}$
Nash's Island Light-house, SW. $\frac{3}{4}$ **S.**	5
Southeast Rock, NE. $\frac{3}{4}$ **N.**	$3\frac{1}{2}$

A buoy will be recommended upon this rock; and when the approaches to this bay have been surveyed, buoys will, no doubt, be placed upon all the ledges.

Simms' Rock, also on the southern side of the channel, is more dangerous than Southeast Rock,—being much nearer to the island. It has about six feet at low water, and lies about two miles **S.** $\frac{1}{2}$ **E.** from Petit Manan Light-house, with eight fathoms water all round it. A spar-buoy, painted red and black in horizontal stripes, is placed in eight fathoms on the northeastern side of the rock, about fifty yards from it. ***Simms' Rock.***

The course leads to the northward of Simms' Rock buoy, and you must look out, on the northern side, for Petit Manan Reef, making off from the southern end of the island about **S.** by **W.** for nearly half a mile, and quite shoal. An iron can-boy of the second class, painted black, and marked No. 1, is placed in seven and a half fathoms on the southern end of the reef. You must pass to the southward of it, and then haul to the northward to enter the bay. ***Petit Manan Reef.***

The Whale, on the eastern side of the entrance, is the next danger, and lies about a third of a mile outside of Egg Rock. It is bare at one-third ebb and breaks at high water.

The Whale.

There is no passage between this rock and **Egg Rock**. The latter is a small, low, rocky island, about ten feet high and destitute of vegetation, lying about three-quarters of a mile **S.** by **W.** from Little Boisbubert, with a narrow channel between them, which is only fit for those well acquainted with its dangers.

Woods Pond Point must receive a berth to the westward of about a quarter of a mile. There is *a detached rock, out at low water*, about one hundred and fifty yards off the point; and half a mile above lies *another, out only at extreme low tides*, and a quarter of a mile from shore. Neither rock is buoyed, and care is requisite to avoid them.

Boisbubert Ledge.

Boisbubert Ledge, lying on the eastern side of the channel, off the western shore of Boisbubert about three hundred yards distant, is a detached ledge, bare at half-tide, extending nearly **N.** and **S.**, and very bold and steep-to,—the deepest water in the bay being found close to its western side. There is no buoy.

Passing Boisbubert Ledge, the passage is clear until near Chitman's Point, when it becomes necessary to keep the Boisbubert shore aboard to avoid the *Lobster Rocks*, extending off Chitman's Point to a distance of two hundred and fifty yards, which is nearly two-thirds of the way across the passage. They are bare at extreme low tides, and not buoyed. When past them, edge over towards the western shore again, especially if the tide be ebb, to avoid the Half-Tide Rocks, a line of ledges extending in a **N NW.** direction from the northern end of Boisbubert about two hundred and fifty yards. They are bare at low water, except one rock on the extreme northern end of the reefs, which is out at half-tide, and gives the name to the group. They are not buoyed, and are especially dangerous to vessels using the Eastern Passage between Boisbubert and Joe Dyer's Point.

Half-Tide Rocks.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PIGEON HILL BAY.

III. ***Coming from the Westward, Outside of Petit Manan Island.***—Bring Petit Manan Lighthouse to bear **NE.** and run nearly for it, passing about six hundred yards to the southward of it. When past the light, and Woods Pond Point bears **N.** by **W.** ½ **W.**, steer that course until past Egg Rock and within seven hundred yards of the point, when steer **N NE.**, and proceed as directed for the bay. (See pages 99–100.)

These courses pass well outside of Moulton's Ledge; well to the northward of Southeast Rock; about a mile to the northward of Simms' Rock; two hundred yards to the southward of the buoy on Petit Manan Reef; half a mile to the westward of The Whale, and the same distance from Egg Rock; a quarter of a mile to the eastward of the rock off Woods Pond Point; and about three hundred yards to the westward of Boisbubert Ledge. They carry not less than three and a half fathoms at low water.

DANGERS

IN APPROACHING AND ENTERING PIGEON HILL BAY.

IV. ***Coming from the Westward, Inside Petit Manan Island, over the Outer Bar.***—From Petit Manan Point to the island a long shoal extends, called Petit Manan Bar. Across this bar there are two channels for light-draught vessels, called, respectively, **Inner** and **Outer Bar** channels. The former is unfit for strangers; but the latter (having ten and a half feet at mean low water) is very often used by the coasting steamers and other light-draught vessels. At low spring tides, however, it has only nine feet.

Intending to cross the bar coming from the westward, the first danger met with is Moulton's Ledge,—bare at low water, and marked by a red and black spar-buoy placed in five fathoms off its southwestern end. It lies four miles **W.** by **N.** from Petit Manan Lighthouse, extends in a **NE.** and **SW.** direction, and is nearly one hundred yards long. Soundings of from three to five fathoms extend from its southern end half a mile to the southward. The buoy may be left on either hand, but it is usual to pass to the southward of it, unless bound over Inner Bar.

Moulton's Ledge.

After passing Moulton's Ledge there are no dangers until up with Petit Manan Bar, or *Petit Manan Outer Bar*, as this shoal should be called. As before mentioned, it is all shoal from the point to the island; but the bar is crossed by two channels, suitable for vessels of light draught,—the Outer Bar having nine feet at lowest tides and twenty-one feet at high water. The channel is narrow, and there is *a ledge, bare at half-tide*, about two hundred and fifty yards from the northern end of the island, which must be left to the southward. There are other ledges on the reef, which are dangerous and require great care to avoid them. The passage of either bar is not recommended to strangers.

Petit Manan Bar.

A spar-buoy, painted black and white in perpendicular stripes, marks the best water in the channel across Outer Bar. In 1872 this buoy had shifted its position, and was then sixty yards too far to the westward, causing a vessel, which attempted to cross by running for it, to go ashore on the bar. (This is mentioned in order that it may be known that the buoy is apt to drift, and that more attention should be paid to the range for crossing than to the position of the buoy.) When in position the buoy bears from the light-house **N.** ½ **E.**

Dangers--Pigeon Hill Bay.

When past the bar, haul up for Woods Pond Point, and the first danger met with is **The Whale,** (see page 95;) then **Egg Rock,** (see pages 95 and 99,) off Little Boisbubert; and then Woods Pond Point, which latter must receive a berth to the westward of a quarter of a mile. There is *a detached rock, out at low water,* about one hundred and fifty yards off the point; and half a mile above lies *another, out only at extreme low tides,* and a quarter of a mile from shore. Neither rock is buoyed, and care is requisite to avoid them.

The other dangers have already been described, (see page 99.)

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PIGEON HILL BAY.

IV. ***Coming from the Westward, Inside Petit Manan Island, over the Outer Bar.***—From Schoodic Island steer **E.** ½ **N.** for Petit Manan Light-house until within a mile and a half of it, when steer **NE.,** with Ship-Stern Island just open to the northward of Jordan's Delight. If the buoy on the bar is in place, this range should carry you up with it and across the bar in nine feet at low water, passing about a third of a mile to the northward of Petit Manan Island. On this course, when Woods Pond Point bears **N.** by **W.** ½ **W.,** or Petit Manan Light-house **S.** ¼ **W.,** steer for the former, and follow the directions given for the bay.

These courses pass a mile and a quarter to the southward of Moulton's Ledge; about three hundred yards to the northward of the half-tide rock to the northward of Petit Manan Island; and half a mile to the westward of The Whale.

Bound to Narraguagus, continue the **NE.** course, with Ship-Stern Island and Jordan's Delight open as before; and, when near the latter, pass between it and Pond Island and steer into the bay; or, when over the bar, steer **E.** by **N.** ½ **N.** to clear Jordan's Delight Ledge, and when Pond Island Light-house opens to the eastward of Jordan's Delight steer about **N.** by **W.** for Trafton's Island, and follow the directions for that bay.

DANGERS

IN APPROACHING AND ENTERING PIGEON HILL BAY.

V. ***Coming from the Westward, Inside Petit Manan Island, over the Inner Bar.***—This channel cannot be used without a pilot, and in heavy weather cannot be used at all, as it breaks heavily from the point to Outer Bar Channel, and often clear to the island. It passes close under Petit Manan Point, and there is a depth of seven feet over it at lowest tides and about nine feet at mean low water. The first danger met with in crossing *Inner Bar* is *Inner Bar Ledge,* bare at half-tide, and about half a mile from the point. It is on the southern side of this channel, is not buoyed, and must not be closely approached for fear of The Old Bull,—a dangerous ledge, bare at low water, lying between Inner Bar Ledge and Petit Manan Point, and about one-third of a mile from the latter. The channel passes to the northward of this ledge, which is not buoyed, and is very dangerous when covered; but at low water it is only necessary to keep about midway between the bare ledge and Petit Manan Point. In heavy weather an unbroken line of breakers extends from the point one mile and a half to the southward. The Old Bull always breaks with violence.

The Old Bull.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PIGEON HILL BAY.

V. ***Coming from the Westward, Inside Petit Manan Island, over the Inner Bar.***—No detailed direction can be given for this passage, which is never used by strangers. None of its dangers are buoyed, and only in fine weather can the bar be crossed at all. The pilots' rule for crossing from the westward is to bring the group of grey-looking houses in Pigeon Hill Bay just open to the westward of a remarkable sandy head on the western end of Boisbubert, and steer in on that range, leaving The Old Bull and Inner Bar Ledge both to the southward, and carrying nothing less than seven feet at lowest tides. Neither the group of houses nor the sandy bluff can possibly be mistaken. When over the bar, haul up about **N NE.,** giving the western shore a berth of about seven hundred yards, and follow the directions previously given.

DANGERS

IN APPROACHING AND ENTERING PIGEON HILL BAY.

VI. ***By the Eastern or Currant Island Passage.***—This passage, as before mentioned, leads between Joe Dyer's Point on the north and Boisbubert Island on the south, and is about seven hundred and fifty yards wide. It is obstructed by shoals, ledges and islets, carries three fathoms at mean low water, and is not safe for strangers. The channel is very narrow and somewhat crooked, and leads between Currant Island and Big Pea Ledge. The first danger met with in approaching the entrance is Pond Island Ledge, making out in a **NE.** $\frac{1}{2}$ **N.** direction from the northern end of Pond Island about three hundred yards. It is bare in several places at low water, and there is but three feet water just to the westward of the buoy on its northern end. This buoy is a black spar, (No. 1,) and is placed in fourteen feet water on the north-eastern end of the reef. It must be left to the southward and the course shaped for Currant Island. On this course look out for **Big Pea Ledge**, on the northern side of the channel, but nearly in the middle of the passage between Joe Dyer's Point and Boisbubert. Is is a low, bare, rocky islet, a few feet above high water mark. The best water is nearest the Currant Island shore.

Pond Island Ledge.

Having passed between Currant Island and Big Pea Ledge, look out for Half-Tide Rocks, lying in a line **N NW.** from the northern end of Boisbubert, and bare at low water. The outermost rock, bare at half-tide, is two hundred and fifty yards from the island, and gives the name to the reef, which is not buoyed. When past these ledges, steer towards the western shore of the bay, (having Chitman's Point to the southward of the course,) and anchor in three fathoms just to the northward of the point; or, wishing to anchor to the southward of Chitman's Point, look out for *Lobster Rocks*, extending from Chitman's Point nearly two-thirds of the way across the passage, and bare at extreme low tide. The eastern end of these rocks is two hundred and fifty yards from the point and is not buoyed. To avoid them, keep the Boisbubert shore aboard until past them.

Half-Tide Rocks.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PIGEON HILL BAY.

VI. ***By the Eastern or Currant Island Passage.***—Strangers must not attempt this passage. When up with Pond Island, pass to the northward, giving it a berth of a quarter of a mile to avoid Pond Island Ledge, and steer about **W.** by **S.** $\frac{3}{4}$ **S.** for the northern end of Currant Island. This island is easily recognized by the groves of stunted fir trees on its northern end. When past it, bring the large lone tree on the northern side of the summit on Pond Island just open with the northern end of Currant Island, and steer in on that course, (keeping the range,) which leads safely into the bay. When, on this course, a large grey house (the most southerly on Petit Manan Neck) is brought over Chitman's Point, you are clear of danger, and thence may keep to the northward, or southward, at pleasure. (The grey house mentioned above cannot be mistaken, as it is the highest house in the village,—being almost on the summit of the hill.)

The above courses pass one hundred and fifty yards to the northward of Pond Island Ledge, and about one hundred yards to the northward of Half-Tide Rocks.

DANGERS

IN APPROACHING AND ENTERING DOUGLASS ISLAND HARBOR.

I. ***From the Eastward.***—This safe and commodious harbor lies between Pond Island on the east and the Douglass Islands on the west. (See page 99.) There is excellent anchorage, with good holding-ground in eight fathoms water, free from ice in the winter, and easy of access. To come into it from the eastward, pass between Pond Island and Jordan's Delight and steer for the middle of Boisbubert, passing to the southward of the Douglass Islands, and then, turning to the northward, run up between the latter and Boisbubert.

On these courses the first danger met with is Seal Cove Ledge. **Seal Cove** lies on the eastern shore of Boisbubert, about a mile above the southeastern point, and abreast of it. Two hundred and fifty yards from shore lies the ledge, which is out at high water, runs **N.** and **S.**, and is to be left to the westward. Passing this, the next danger is on the eastern side, and is called *Douglass Island Ledge.* It lies off the northern end of the western island,—its northern point being a little over a quarter of a mile from the island. There is a channel between it and the northern point by keeping the latter close aboard; but no stranger should attempt this.

Seal Cove Ledge.

After passing this ledge the channel leads to the eastward, towards Pond Island, and there are no more dangers.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING DOUGLASS ISLAND HARBOR.

I. ***From the Eastward.***—Pass about midway between Pond Island and Jordan's Delight and steer for the middle of Boisbubert. When within about five hundred yards of the shore of Seal Cove, Joe Dyer's Point will bear **N.** ½ **W.**, and the passage between the Douglass Islands and Boisbubert will be fully open. Steer **N.** ½ **W.**, (having Currant Island and Joe Dyer's Point nearly in range,) and when about a third of a mile (six hundred yards) to the northward of the westernmost Douglass Island steer about **E.** ½ **N.** towards Pond Island, passing about two hundred yards to the northward of the easternmost Douglass Island. Round this island, steer to the southward, between it and Pond Island, and anchor at discretion. The depth is eight fathoms, the holding-ground good, and the shelter in easterly gales perfect.

The above courses pass two hundred yards to the eastward of Seal Cove Ledge; one hundred yards to the northward of Douglass Island Ledge, and carry over four fathoms all the way.

DANGERS

IN APPROACHING AND ENTERING DOUGLASS ISLAND HARBOR.

II. ***From the Westward, or from Sea.***—In approaching from the westward, outside of Petit Manan, the first danger met with is Simms' Rock, already described, (pages 94 and 101,) which has six feet at low water, and lies about two miles **S.** ½ **E.** from Petit Manan Light-house, with eight fathoms water all around it. A spar-buoy, painted red and black in horizontal stripes, is placed in eight fathoms on the northeastern side of the ledge and about fifty yards from it. Pass to the northward of this, and look out, on the northern side, for *Petit Manan Reef*, making off from the southern end of that island about **S.** by **W.** for nearly half a mile, and quite shoal. An iron can-buoy of the second class, painted black and marked No. 1, is placed in seven and a half fathoms on its southern end. Pass to the southward of the buoy, and haul up for Pond Island Light-house. ***Simms' Rock.***

On the course for the light-house the first danger met with is Jerry's Ledge, lying about a quarter of a mile to the southward of the southeastern point of Boisbubert, (called **Big Head.**) It is awash at low water and is not buoyed; but must be left to the westward, and the course shaped for Joe Dyer's Point. On this course, when near Seal Cove beware of *Seal Cove Ledge*, lying about two hundred and fifty yards from the shore of the cove and out at high water. It runs **N.** and **S.**, and is to be left to the westward. ***Jerry's Ledge.***

Passing Seal Cove Ledge, the next danger, on the eastern side of the channel, is Douglass Island Ledge, lying off the northern end of the western island. It is a detached rock,—its northern point being a little over a quarter of a mile from the island,—and is not buoyed. There is a channel between this rock and Douglass Island by keeping the latter close aboard; but no stranger should attempt this. The ledge must be left to the southward; as the course turns to the eastward towards Pond Island, and then to the southward, between that island and the Douglass Islands. ***Douglass Island Ledge.***

Coming from seaward, the first danger met with in approaching Petit Manan Light-house is Southeast Rock, lying four miles **S.** by **E.** from the light-house, and having seven feet at lowest tides. An iron can-buoy of the second class, painted red and black in horizontal stripes, is placed in eight fathoms water a little over thirty yards to the northwestward of the ledge. It may be left on either hand by giving it a berth; but vessels coming from the southward should pass to the westward of it. When past it, the red and black spar-buoy on Simms' Rock will soon appear, and must also be left to the westward. ***Southeast Rock.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING DOUGLASS ISLAND HARBOR.

II. ***From the Westward, or from Sea.***—*Coming from seaward*, steer for Petit Manan Light-house on a course about **N.** by **E.** until up with the black can-buoy on Petit Manan Reef. Pass to the eastward of this, bring Pond Island Light-house to bear **N NE. Northerly**, and steer for it until abreast of the southeastern point of Boisbubert, and distant from it half a mile. Now steer **N.** ½ **W.** for Joe Dyer's Point, passing midway between Boisbubert and the westernmost Douglass Island, and follow the directions for entering the harbor.

The above courses pass a mile and a half to the westward of Southeast Rock; half a mile to the westward of Simms' Rock; half a mile to the eastward of Petit Manan Reef; and seven hundred yards to the eastward of Jerry's Ledge. They carry not less than four fathoms.

Coming from the westward, pass to the southward of Petit Manan Island about a mile on an **E. by N. ½ N.** course; and when past the buoy on the reef bring Pond Island Light-house to bear **N NE. Northerly,** and steer for it, following the directions given above.

These courses pass one mile to the northward of Simms' Rock; half a mile to the southward of Petit Manan Reef; and the same distance to the eastward. They carry not less than four fathoms water.

LIGHT-HOUSES.

NAME.	Latitude N.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		m. s.	Feet.	
Pond Island, or Narraguagus Light-house.	**44 27 20**	**67 49 52**	**4 31 19.5**	Fixed.	.....	**45**	**12**
Petit Manan Light-house	**44 22 2**	**67 51 51**	**4 31 27.4**	F. V. F.	**2 0**	**125**	**17**

VARIATION OF THE COMPASS.

The magnetic variation for the year 1879 is **15° 34′ W.**, with an approximate annual increase of **2′.**

ICE IN PIGEON HILL BAY.

The period of ice-formations and their character in this bay, and in Dyer's and Gouldsboro' bays to the westward, are the same as in Machias, Englishman's and Narraguagus bays, to which the mariner is referred, (pages 63 and 96–97.) In general terms, it may be remarked that navigation is dangerous for sailing-vessels between December and March; but that, in ordinary winters, steamers can make their way without much difficulty to the lower landing. In severe winters all navigation ceases from about the last of January to about the first of March.

DYER'S BAY

is a long and narrow arm of the sea, making in a **N NE.** direction, just to the westward of Pigeon Hill Bay. It is separated from the latter by Petit Manan Neck, and from Gouldsboro' Bay (to the westward) by Dyer's Neck. At the entrance it is a mile and three-quarters wide, (from Petit Manan Point to Dyer's Point,) but rapidly contracts to a width of about twelve hundred yards, which it keeps, with slight deviations, to within a mile and a half of its head. From Petit Manan Point to the head of the bay the distance is six nautical miles.

There is good anchorage, with excellent holding-ground, anywhere above Sheep Island, in from three to five fathoms, muddy bottom. The bay is easy of access, although the islets and ledges at the mouth are apt to frighten a stranger. There is, however, a deep and good channel, perfectly safe, which runs close to the Dyer's Bay Ledges, and may be readily attempted by strangers.

On approaching this bay from the vicinity of Petit Manan Island a very remarkable high, bare, rocky head will be seen about six miles to the westward,—its outline cut into steps and its summit bare of trees. This is **Schoodic Head,** the southern extremity of Schoodic Neck,—the eastern point of entrance to Frenchman's Bay. Behind it, and to the northward, rises the high, bare summit of **Green Mountain,** on Mount Desert Island. These two hills (Schoodic and Green Mountain) are the most prominent landmarks on this part of the coast, and are usually steered for by vessels coming on the coast from seaward, whether they are bound to the eastward or westward.

Petit Manan Point. The eastern point of entrance to Dyer's Bay is Petit Manan Point, the southernmost end of **Petit Manan Neck.** It is low, rocky, covered with a stunted growth of fir and spruce, and extends off at low water into a long, low, rocky ledge, bare of all vegetation. It bears from Petit Manan Light-house **NW.** by **N. ½ N.,** two miles and a half distant.

Dyer's Point. Dyer's Point, the western point of entrance, is a mile and three-quarters **NW.** from Petit Manan Point, and is the southern extremity of **Dyer's Neck,** which forms the western shore of the bay. It is low, rocky, covered with a scrubby growth, and has a bare, white summit, on top of which was (in 1872) a large wooden tripod. Several ledges and rocks lie off the point, rendering it dangerous of approach.

On the eastern shore of the bay, about a mile and a half above Petit Manan Point, is **Yellow Birch Head,** a bare, bluff, sandy head, with precipitous faces, and destitute of trees. A long reef making out from it about a quarter of a mile is in part bare at low water, and has about five feet on its western end. Nearly opposite to the head, on the western shore of the bay,

is Stanley's Point, about five-eighths of a mile above Dyer's Point, and forming the southern point of a narrow cove making to the westward, called **Stanley's Cove.** This point is easily recognized,—being composed of white rock, bare of all vegetation except clumps of grass and scrub, and sloping gradually to the water. Viewed from seaward, it appears as a round, white, rocky head, entirely bare. **Stanley's Point.**

A mile above Stanley's Point, on the western bank, is Yeaton's Point, the southern point of entrance to **Yeaton's Cove.** The latter is a small but shallow cove, making to the westward; and is of no importance, as there is no safe anchorage. **Yeaton's Point.**

On the eastern shore of the bay the land is partly wooded and partly cleared, but in no place fertile or well cultivated. Settlements are very few,—a barren and desolate appearance being presented towards the bay. A mile above Yellow Birch Head, and nearly opposite to Yeaton's Cove, a long and very narrow cove makes to the southward, called **Over's Cove.** It is of no importance.

Parker's Point, on the eastern shore, nearly two miles to the northward of Stanley's Point and a little below Sheep Island, lies at the southern base of Eagle Hill. It is low and covered with a thick growth of birch and other hardwood trees; and a small, shallow cove makes to the westward, on its southern side.

Eagle Hill, the most prominent landmark in this bay, situated at the head of Dyer's Neck and on the western shore, is a round, gently sloping hill, not quite so high as Pigeon Hill, and with a bare, rocky summit. Seen from the southward, it appears covered with low bushes and small trees; but viewed from the eastward, it appears thickly wooded for about half its height,—the rest being bare. It is three miles above Dyer's Point, and lies on the southern shore of Dyer's Harbor. **Eagle Hill.**

The Sheep Islands lie nearly opposite to, but a little above, Parker's Point, and three miles and a half above Petit Manan Point. They are about midway between the eastern and western shores, lie **NW.** and **SE.** from each other, and are distinguished as the **Eastern** and **Western Sheep** islands. The former, much the smaller of the two, is thickly wooded with a dense growth of small fir and spruce; while Western Sheep Island is, on the contrary, covered only with scrub. Seen from the mouth of the bay, the two islands appear low and wooded,—the western end of the western island showing as a low, yellow point. It is this head which is steered for in coming up the bay. **Sheep Islands.**

From Dyer's Point to Eagle Hill the western shore of the bay is mostly low and well wooded; but it is not steep-to, as a line of sunken kelp ledges lie at some distance from the shore and render it dangerous to approach. The eastern shore, on the contrary, is quite bold-to in its approaches.

Opposite to the northern end of the Western Sheep Island, and on the eastern shore of the bay, will be seen the entrance to a long and narrow cove making in a southerly direction across Petit Manan Neck, past the base of Pigeon Hill, and nearly reaching Pigeon Hill Bay,—there being only a narrow isthmus, two hundred yards wide, between the latter and the head of the cove. There is no passage between the Sheep Islands and the mouth of the cove, nor is it of any importance,—being shallow and unfit for anchorage.

Dyer's Harbor is the usual anchorage in this bay, and makes in on the northern side of Eagle Hill a little more than three and a quarter miles above Dyer's Point. It is a large cove, half a mile long and about a quarter of a mile wide, lying in a **NW.** direction from the western side of the bay, and affords good anchorage in all winds. Its southern point of entrance, **Schooner Point,** lies at the base of Eagle Hill; and is low, rocky, and covered only with scrub and low bushes. The channel leads between the point and a low, rocky islet, covered with a thick growth of stunted fir and spruce, lying off Good's Point, but joined to it by ledges at low water. **Dyer's Harbor.**

The northern point of Dyer's Harbor entrance is called Good's Point, and is low, rocky, and thickly wooded with a variety of trees. It is three-eighths of a mile to the northward of Schooner Point and a mile to the northward of the Sheep Islands. The northern shore of the harbor to the westward of this point begins to show cleared and thinly settled lands, and the cove gradually contracts its width to its head at **Beaver-Dam Brook,** three-eighths of a mile above. **Good's Point.**

Vessels of large draught usually anchor under Good's Point after passing the small wooded island at the entrance, as the southern shore is rather shoal. Vessels of light draught may anchor anywhere, according to their draught.

Above Dyer's Harbor the bay turns to the eastward, running about **NNE.** for one mile and a quarter to its head, thus forming a long but very shallow bay, called **Pinkham's Bay,** full of ledges and flats, and having no passage except at high water.

DANGERS

IN APPROACHING AND ENTERING DYER'S BAY.

I. ***Coming from the Eastward.***—On coming up with the entrance to this bay, when past Petit Manan Island, there will be seen on the western side of the entrance a line of low, rocky islets, lying in an **E.** and **W.** direction, called the Sally Islands. They are six in number, mostly crowned with a thin growth of stunted trees and bushes, and their rocky faces bleached white. The easternmost lies within half a mile of Dyer's Point, while the most westerly is on the western side of Gouldsboro' entrance. Thus they form an apparent barrier to the ***Sally Islands.***

Dangers--Dyer's Bay. entrance to Gouldsboro' Bay. The easternmost island, known as **Eastern Island**, lying just to the westward of Dyer's Point, is bare except in the middle, where there is a small grove of bushes and stunted fir. Off its eastern end extends in an **E.** direction for nearly a mile a line of bare ledges, known as *Eastern Island Ledges*, or *Dyer's Bay Ledges*. These are bold-to on their eastern side, but must not be approached from the southward on account of the sunken rocks in that direction.

The Old Bull. The Old Bull, lying off Petit Manan Point, is out at low water, and breaks heavily at all times. It lies about a third of a mile from the point and is not buoyed. In heavy weather breakers extend in an unbroken line for a mile and a half from Petit Manan Point.

Yellow Birch Reef. When near Stanley's Point, do not go too close to the eastern shore, to avoid Yellow Birch Reef, making out from Yellow Birch Head about a quarter of a mile, and in part bare at low water. It has not more than five feet on its western extremity, and there is no buoy. After passing it, the eastern shore is bold-to, while the western shore is ledgy and must not be approached closely.

There are no dangers in the bay above this point.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING DYER'S BAY.

I. ***Coming from the Eastward.***—Give Petit Manan Light-house a berth of half a mile to the northward and the island the same berth to the eastward, and steer for Dyer's Point, about **N NW.** When abreast of Petit Manan Point, steer **N.** ½ **E.** until up with Stanley's Point, avoiding the reef off Yellow Birch Head; and then **N.** by **E.** ½ **E.** up the bay, passing to the westward of the Sheep Islands. When up with the entrance to Dyer's Harbor, pass midway between Schooner Point and the wooded islet off Good's Point, and anchor under the latter point in from three to four fathoms, stiff clay bottom. *Or*, instead of entering Dyer's Harbor anchor anywhere to the northward of the Sheep Islands, in from four to five fathoms water, mud and clay.

This harbor affords excellent anchorage in all winds.

The above courses pass to the southward of the black can-buoy on Petit Manan Reef close-to; about three hundred yards to the westward of The Old Bull; close to the easternmost of the Dyer's Bay Ledges; and about two hundred yards to the westward of Yellow Birch Reef. They carry not less than four fathoms water.

DANGERS

IN APPROACHING AND ENTERING DYER'S BAY.

II. ***Coming from the Westward.***—Moulton's Ledge, bare at low water, lies three miles **W.** by **N.** from Petit Manan Light-house and three miles **SW.** by **W.** ½ **W.** from Dyer's Point.

Moulton's Ledge. It extends in a **NE.** and **SW.** direction for one hundred yards, and is marked by a red and black spar-buoy, placed in five fathoms water off its southwestern end. Soundings in from three to five fathoms extend to the southward half a mile from this southwestern end, but on the northern side the water is deeper. The buoy may be left on either hand, but it is usual to pass to the southward of it.

The Old Bull. When past the buoy on Moulton's Ledge the bay is open, and the next danger is The Old Bull, (before described, on page 103 and above.) It lies about one-third of a mile off Petit Manan Point, is out at low water, breaks heavily at all times, and is not buoyed. The courses pass well to the westward of it.

Dyer's Bay Ledges. Dyer's Bay Ledges, or *Eastern Island Ledges*, lie on the western side of the entrance, extending to the eastward from Eastern Island nearly a mile. They are always out, and are bold-to on their eastern side; but must not be approached from the southward on account of the sunken reefs lying off their southern sides. In going in, the easternmost ledge is passed close-to,—being left to the westward.

Yellow Birch Reef. Yellow Birch Reef is the next danger, and lies on the eastern side of the channel,—making off from Yellow Birch Head in a westerly direction for about a quarter of a mile. It is in part bare at low water, and has not more than five feet on its western end. After passing it the eastern shore is bold-to, while the western is ledgy and must not be approached closely in beating to windward.

Above Yellow Birch Reef there are no dangers.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING DYER'S BAY.

II. ***Coming from the Westward.***—Pass Schoodic Island, and when up with Moulton's Ledge buoy pass to the southward of it, and steer **NE. ¼ N.** for the eastern end of the Dyer's Bay Ledges. This course brings Yellow Birch Head a little to the eastward of **N.** When up with the ledges, pass to the eastward and close to them, and steer **N. ½ E.** until up with Stanley's Point; and then **N.** by **E. ½ E.** up the bay, following the directions given above.

These courses pass five hundred yards to the southward and three hundred yards to the eastward of Moulton's Ledge buoy; close to Dyer's Bay Ledges, leaving them to the westward; and about two hundred yards to the westward of Yellow Birch Reef. They carry not less than four fathoms.

VARIATION OF THE COMPASS.

The magnetic variation in Dyer's Bay for 1879 is **16° 34′ W.**, with an approximate yearly increase of **2′**.

GOULDSBORO' BAY

lies next to the westward of Dyer's Bay, from which it is separated by Dyer's Neck. It is an arm of the sea, making in a nearly **N.** direction, is seven miles long, (including Steuben Harbor,) and has an average width of a mile and a quarter to The Narrows, five miles above its mouth. That part of the bay between The Narrows and Steuben Harbor is called Joy's Bay, and is all shoal water.

In approaching from Petit Manan the course is about **N NW.**, and there will be seen: **First**, the long, low, rocky point of Petit Manan Neck, bearing about **N. by E.**; the round, white summit of Stanley's Point next to the westward, with Dyer's Bay open between them; and ahead the Sally Islands, with Eastern Island a little to the northward. To the eastward of Eastern Island, the bare ledges extending towards Petit Manan Point are the Dyer's Bay Ledges. The high land of **Schoodic Head**, with **Green Mountain** on Mount Desert, are seen to the westward—the former being about five miles distant.

Sally Islands.

The line of islets across the mouth of Gouldsboro' Bay are the Sally Islands, six in number. Eastern Island is sometimes counted as one of the group, which, in such case, would number seven. The channel leads between it and the easternmost of the Sally Islands, which is about thirty feet high, looks like a cluster of round rocks, and is bare of all vegetation except a scanty growth of moss and grass. Next, to the westward, is another rocky islet, somewhat higher, and bare of everything but a few dead stumps and one or two sickly spruce trees. The remaining islets of the group are similar in appearance,—being rocky, tolerably high, and bare of all vegetation except a few stunted trees here and there. The channel between Eastern Island and the Sallies is about a quarter of a mile wide, and has not less than four fathoms at mean low water. **Eastern Island**, already described, (pages 107–108,) lies on the eastern side of the channel and about a quarter of a mile from Dyer's Point. It is rocky and bare except in the middle, where there is a small grove of stunted fir trees and bushes.

Dyer's Point.

Dyer's Point, the eastern point of entrance to Gouldsboro' Bay, is the southern end of **Dyer's Neck**,—the long peninsula separating this bay from Dyer's Bay to the eastward. It is a mile and three-quarters **NW.** from Petit Manan Point; and, seen from the westward, is low, rocky, destitute of trees, and has a bare, white summit, (see also page 106.) There is no passage between this point and Eastern Island.

When in the middle of the entrance between Eastern Island and the Sallies the shores of the bay will appear low and wooded, and there will be seen stretching in a line across its head the grand outlines of the **Tunk Mountains**, (a range of handsome hills in the township of **Cherryfield**,) about five miles to the northward of Steuben. The two most prominent hills of the range are **Humpback Mountain**, which shows two round humps, and **Burk Hill**, which is lower than Humpback, and has a nearly flat top, with a steep slope to the southward.

Several houses are seen on the low shore at the head of the bay; but as a rule little cultivated land appears.

Sand Cove Point.

Above Dyer's Point the eastern shore of the bay is low and thickly wooded to Sand Cove Point, a mile and a quarter above Eastern Island. This point is low, woody, and has several large boulders scattered at the edge of the woods. On its northern side makes in a small cove of no importance, called **Sand Cove**; but above this there are no noticeable features on the eastern shore until up with **Big Ben**, a mile above Sand Cove and two and a quarter miles above Eastern Island. This is a very remarkable rock, standing in a cleared space among the trees, and when first seen looks like a weather-beaten, unpainted barn. It is, however, a huge, square, grey rock, with perpendicular sides, and is by far the most noticeable feature of the bay.

The eastern bank, from Sand Cove to Big Ben, has a general course about **N.**, and is nearly straight, with no indentations It is low and thickly wooded.

The western bank, above **Young's Point**, (the western point of entrance,) is more irregular in outline, somewhat higher than the eastern shores, and generally thickly wooded with a small growth of fir and spruce that, from a distance, looks like scrub and bushes.

Three-quarters of a mile above Young's Point makes in **Ward's Cove**, a large cove, shallow, and of little importance, affording anchorage to vessels of light draught; but above this cove the western shore is nearly as straight as the eastern,

West Bay, or Gouldsboro' Harbor. and runs in a northerly direction about two miles and a half to **Pilot's Point**, which is about sixty feet high and densely covered with fir and spruce to the water's edge. It is nearly three miles and three-quarters above Young's Point, and forms the southern point of entrance to West Bay, or Gouldsboro' Harbor.

This bay is an arm of Gouldsboro' Bay, making in, first to the westward and then to the northward, to the town of **Gouldsboro'**, which occupies its western shore near its head. It is three miles and a half long in a **N.** and **S.** direction, and has an average width of three-quarters of a mile; but it is shallow and unfit for strangers,—there being no channel except at high water.

Point Francis. One mile to the westward of Pilot's Point is Point Francis; and between the two a large but shallow cove, which is not named. Point Francis is also low and thickly wooded, like Pilot's Point, and when seen from the eastward looks like a continuation of the latter. It is the proper southern point of entrance to Gouldsboro' Harbor, and behind it (to the westward) there is a long and wide cove, forming the southern part of West Bay, known as **Great Marsh Bay**. This extends to the southward a mile; but is shallow and of no importance.

Jetteau's Point, the northern point of entrance to West Bay, and about twelve hundred yards to the northeastward of Point Francis, is low, rocky, crowned with a stunted growth of fir, and at low water extends into a long, bare ledge.

Marsh Cove Point. On the eastern shore of Gouldsboro' Bay, about a mile above Big Ben, and nearly opposite to Pilot's Point, lies Marsh Cove Point, a low, sandy head, covered with birch, and showing a precipitous, water-worn face to the westward. A great number of small boulders are scattered at its base, and it is also remarkable as being the only sandy head between the mouth of the bay and Rogers' Point. When past it the houses in the village of **Steuben** open from behind the woods on the eastern shore, showing over the low land of Rogers' Point, the eastern point of entrance to Joy's Bay;—for above this point the name of Gouldsboro' Bay is lost and the former substituted for it.

Rogers' Point. Rogers' Point is a long, low, flat, grassy point, with perpendicular, sandy faces, bare of trees except at its western end, where a very few may be seen. A group of three rocky islets, two of them covered with scrub, lie on the northern side of the point, in a line **N.** and **S.** The two nearest to the shore are called **Money Islands**, and at low water are joined to Rogers' Point. The third or northernmost is entirely bare, and is known as **Lobster Island.** There is no passage between it and the Money Islands.

About half a mile to the northwestward of Jetteau's Point, in Gouldsboro' Harbor, is **William's Point**, low, with steep faces and thickly wooded; and between the two makes in **Timber Cove**, a small indentation of no importance. Opposite to William's Point, on the western side of the harbor, is **Guptill's Point**, low, flat and grassy, with a few scattered trees upon it. This latter point also forms the western point of entrance to Great Marsh Bay.

Garden Point. Garden Point is on the western shore, a little above Jetteau's Point, and nearly opposite to Rogers' Point. It is a low, flat point, with a group of very large willow trees and two or three houses. Seen from a distance the willows have the appearance of orchard trees. Between this and Rogers' Point the bay is but three-eighths of a mile wide, forming what is called **The Narrows.**

Joy's Bay. Joy's Bay is a mile and three-quarters long and has an average width of five-eighths of a mile. At its head it divides—one branch, running to the northeastward, forms Steuben Harbor; the other, running first to the westward and then to the northward, is called Joy's Cove. The shores of the bay are partly wooded, partly cleared and settled, and in most places show perpendicular, sandy faces.

A little over half a mile above Garden Point, on the western shore of Joy's Bay, is **Wall's Point**, with steep faces and thickly wooded; and about three-quarters of a mile above this is Stevens' Point, the southern point of entrance to Joy's Cove. On the eastern shore of Joy's Bay, about a mile above Rogers' Point is **Parrit's Cove**, a semicircular cove, about three hundred and fifty yards in diameter, but bare at low water. The northern point of entrance to this cove, called **Parrit's Point**, is low, level and grassy, with perpendicular faces. About six hundred yards above it is **Bald Point, or Val's Point**, as it is sometimes called, which forms the southeastern point of entrance to Steuben Harbor.

Steuben Harbor. Steuben Harbor is formed by the eastern branch of Joy's Bay, and is shallow,—affording anchorage only for vessels of very light draught. Bald Point, its eastern point of entrance, is a sandy bluff, with flat surface, and the western point is also a sandy head, with cleared, grassy, level surface, and called **Burnt Point**, or **Baker's Point.** The latter is also the eastern point of entrance to **Joy's Cove**, the western branch of the bay, which runs to the westward, between Burnt Point on the north and east, and a sandy head, with perpendicular faces, covered with clumps of birch, and called **Stevens' Point.** There is no anchorage in the cove, the water being very shallow, except at high water.

The dangerous **Weir Ledges**, bare at half-tide, obstruct the entrance to Steuben Harbor;—extending from Val's Point in a **NW.** direction four hundred and fifty yards, or to within an eighth of a mile of Burnt Point. The latter point is also shoal, and must receive a berth to the westward of not less than one hundred yards;—so that the available channel at low water is only about one hundred yards wide. In Joy's Bay also there are several ledges lying off the entrance to **Baker's Cove** on the northern, and **Tucker's Creek** on the southern shore;—but this bay is easier of access than Steuben Harbor.

The principal anchorage in Gouldsboro' Bay is on the western side, near Garden Point, and just below Rogers' Point. Here from three to four fathoms may be found, with excellent holding-ground in a sort of stiff clay mixed with mud. After riding for twenty-four hours it is often found a work of considerable labor to get the anchor.

DANGERS

IN APPROACHING AND ENTERING GOULDSBORO' BAY.

I. ***Coming from the Eastward, Outside of Petit Manan Island.***—The first danger met with in approaching Petit Manan from the eastward is Southeast Rock, which has seven feet at lowest tides, lies three miles **SE.** by **S.** ½ **S.** from the light-house, and is marked by an iron can-buoy of the second class, painted red and black in horizontal stripes. The buoy is in eight fathoms water, a little over thirty yards to the northwestward of the shoal, and there are soundings of from eight to ten fathoms on all sides of the rock. It is usual to pass well to the northward of the buoy, unless bound along the coast. ***Southeast Rock.***

The next danger encountered is *Simms' Rock*, with six feet at low water, lying about two miles **S.** ½ **E.** from Petit Manan Light-house, with eight fathoms water all around it. A spar-buoy, painted red and black in horizontal stripes, is placed in eight fathoms fifty yards to the northeastward of the rock, and is usually left to the southward by vessels bound into any of the neighboring harbors. When up with it, look out on the northern side of the channel for Petit Manan Reef, marked by an iron can-buoy of the second class, painted black. It makes off from the southern end of the island about **S.** by **W.** for nearly half a mile, and is quite shoal. The buoy is on the southern end, in seven and a half fathoms. Pass to the southward of it, and when well past the buoy haul up for the mouth of the bay. ***Petit Manan Reef.***

On this latter course the first danger is Moulton's Ledge, three miles **W.** by **N.** from Petit Manan Light-house, with a red and black spar-buoy placed in five fathoms water off its southwestern end. This ledge is bare at low water, and extends in a **NE.** and **SW.** direction nearly one hundred yards, with shoal water extending from it to the southward about half a mile. The buoy is to be left to the westward if bound into Gouldsboro' Bay. When past it, look out for *Dyer's Bay Ledges*, which extend in an easterly direction from Eastern Island nearly a mile, and must not be closely approached on their southern side, as there are sunken rocks in that direction. The ledges themselves are always out, and there is no passage between them and Eastern Island. Vessels bound into Gouldsboro' Bay pass well to the westward of them. ***Moulton's Ledge.***

After passing between Eastern Island and the easternmost of the Sally Islands there are no dangers in the bay until you approach Pilot's Point. All that is requisite is to keep off the shores. But when up with Pilot's Point you must be careful not to go to the westward of a line between the northeastern end of that point and the eastern extremity of Jetteau's Point, or, what is better, to go about as soon as Jetteau's Point bears **N NW.** Thus you will avoid *the great mass of ledges and flats* which occupies all of the bight between Pilot's Point and Point Francis. Nearly all of this bight is bare at low water, and many ledges are bare at half-tide. The northernmost of these ledges, which also marks the southern limits of the entrance to Gouldsboro' Harbor, is called **Shag Ledge,** is out at half-tide, and lies about twelve hundred yards **NW.** by **N.** ⅜ **N.** from Pilot's Point,—leaving a passage between it and Jetteau's Point nearly six hundred yards wide; but the available channel is diminished to three hundred yards by the ledges off Jetteau's Point.

Point Francis must receive a berth to the southward of not less than a quarter of a mile, on account of the numerous ledges, bare at half-tide, extending from it to the northward and northeastward; nor must the northern shore of the entrance be too closely approached,—for a dangerous ledge, called **Seal Ledge,** lies nearly in the middle, off the mouth of **Timber Cove,**—(the shallow cove on the western side of Jetteau's Point.)

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING GOULDSBORO' BAY.

I. ***Coming from the Eastward, Outside of Petit Manan Island.***—Pass three-quarters of a mile to the southward of Petit Manan Light-house, and when it bears **NE.** by **E.** ½ **E.**, about a mile off, steer **N NW.**, which will lead, with not less than four fathoms, between Eastern Island and the easternmost Sally Island, into the bay. When about three-quarters of a mile above the Sallies and off the entrance to Ward's Cove, steer **N.** ½ **E. Nearly,** for Garden Point, and anchor, at discretion, either off the entrance to West Bay, or under the western shore between Garden Point and Rogers' Point, in from three to four fathoms, stiff clay and mud. Only vessels of light-draught go above The Narrows, and they must have a pilot.

DANGERS

IN APPROACHING AND ENTERING GOULDSBORO' BAY.

II. ***Coming from the Westward.***—After passing Schoodic Island look out for Moulton's Ledge, which is bare at low water, and has a spar-buoy, with black and red horizontal stripes, off its southwestern end. This ledge is about two miles to the ***Moulton's Ledge.***

southward of the Sallies and three miles W. by N. from Petit Manan Light-house, and extends in a NE. and SW. direction nearly one hundred yards, with shoal soundings (from three to five fathoms) nearly half a mile to the southward from the dry ledge. The buoy may be left either to the northward or southward in coming into Gouldsboro' from the westward, but it is usual to pass to the southward of it. There are no dangers after passing Moulton's Ledge.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING GOULDSBORO' BAY.

II. ***Coming from the Westward, and intending to pass to the Northward of Moulton's Ledge.***—When past Schoodic Island, get Petit Manan Point to bear E. by N. and run for it, passing inside of Moulton's Ledge to the northward of it. On this course, when Petit Manan Light-house bears SE. ½ E. and the middle of the passage between Eastern Island and the easternmost of the Sallies N. ½ W., steer the latter course until past the entrance, when steer N NW. for about three-quarters of a mile, until off Ward's Cove. Now steer N. ½ E. for The Narrows, and proceed as before directed.

These directions lead nearly three-quarters of a mile to the northward of Moulton's Ledge, and carry not less than three fathoms water.

III. ***Coming from the Westward, and intending to pass to the Southward of Moulton's Ledge.***—When past Schoodic Island, bring Petit Manan Light-house to bear E. by N. and steer for it until Petit Manan Point bears NE. by N. ½ N. and the middle of the passage between Eastern Island and the easternmost of the Sallies N. ½ W. This clears Moulton's Ledge, passing to the southeastward of it, with Petit Manan Light-house two miles off. Now steer N. ½ W. until in the middle of the passage, when N NW. carries the best water to abreast of Ward's Cove. Now steer N. ½ E., and proceed as before directed. Or, continue the course N. ½ W. until about three-quarters of a mile above Sand Cove Point and in the middle of the bay, when steer N. ½ E., and proceed as before directed.

The above courses pass a mile and a half to the southward of Moulton's Ledge, and carry nothing less than three fathoms to the anchorage.

Directions cannot be given for Gouldsboro' and Steuben harbors, as there is no channel except at high water, and that is not fit for strangers.

VARIATION OF THE COMPASS.

The magnetic variation in Gouldsboro' Bay for 1879 is 16° 31′ W., with an approximate annual increase of 2′.

ICE IN DYER'S AND GOULDSBORO' BAYS.

The period and character of ice formations in these bays are the same as in Machias, Englishman's, Narraguagus and Pigeon Hill bays, to which the mariner is referred. (See pages 50, 96–97.) In general terms, it may be remarked that navigation is dangerous for sailing-vessels between December and March; but that, in ordinary winters, steamers could make their way without much difficulty as far up as Pilot Point, in Gouldsboro' Bay, and Good's Point, in Dyer's Bay. (There is, however, at present no steam navigation in these bays.) In severe winters (like that of 1874–5) all navigation ceases from about the last week in January to about the first week in March.

PROSPECT HARBOR.

Cranberry Point. Two miles W. by S. from Eastern Island lies Cranberry Point, the eastern point of entrance to Prospect Harbor. It is long, low and rocky, bare of trees, and has patches of scrub here and there. From it a long ledge extends to the southward, breaking heavily, except in very moderate weather. There are several houses on the point, some distance back from the shore.

Prospect Harbor is a large cove, running N. and S., about a mile and a half long, (the **Outer Harbor** having an average width of one mile,) and affords good anchorage in northerly or northeasterly gales. It is, therefore, much frequented by coasters. Its shores are mostly low, but backed by thickly wooded lands of moderate height.

Coming from the eastward, as soon as the western extremity of Cranberry Point bears N. by W. the harbor will be open, and there will be seen at its head a large white house with what appears to be a small cupola on its gable end. This is Prospect Harbor Light-house, built on the end of the keeper's dwelling, and from a distance only so much of it is seen as rises above the roofs,—giving it the appearance mentioned above. The light-house is built on **Prospect Harbor Point**, the dividing point at the head of the cove, separating **Sand Cove** on the east from **Inner Harbor** on the west. It is a granite tower, whitewashed, and joined to the keeper's dwelling

Prospect Harbor Light-house.

It shows a revolving red and white light, of the fifth order, from a height of forty-five feet above the sea, flashing every thirty seconds, and visible eleven miles. Its geographical position is

Latitude ..... **44° 24′ 11″ N.**
Longitude ..... **68° 0′ 46″ W.**

From off Cranberry Point the houses in the settlement will appear to the westward of the light-house. A prominent church with tall spire also appears on the western shore. In 1872 this was unpainted, and had a peculiar yellowish appearance on that account.

A good landmark for Prospect Harbor is a remarkable long grove of black-looking trees of about equal height, standing on top of the high land just to the westward of the harbor.

Petty's Point. Petty's Point, the western point of entrance to Prospect Harbor, is a mile and three-quarters **WNW.** from Cranberry Point, and is low, rocky, and clothed only with low scrub; but the land rises behind it to a considerable height.

DANGERS

IN APPROACHING AND ENTERING PROSPECT HARBOR.

Little Black Ledge. I. ***Coming from the Eastward.***—The usual course from the eastward is to pass between Cranberry Point and a bare ledge, called Little Black Ledge, nearly covered at high water, lying one mile **S.** ½ **W.** from Cranberry Point and two and a half miles **S.** by **E.** ¼ **E.** from the light-house.

Pass to the southward of Little Black Ledge, and continue to the westward until the light bears **N.** ½ **E.**; or haul to the northward as soon as past the ledge, and pass between it and Big Black Ledge, or **Big Ledge**, as it is sometimes called,—a rocky islet, bare of everything, lying **S.** by **E.** from the light-house, distant two and a third miles; **SW.** by **S.** ¾ **S.** from Cranberry Point, distant nearly one mile; and **W.** by **N.** ½ **N.** from Little Black Ledge, distant about one-third of a mile. The channel between the two is excellent and safe, and is very often used by vessels from the eastward. **Big Black Ledge.**

One-third of a mile to the westward of Big Black Ledge lies *The Old Man*, bare at half-tide, but not in the way of vessels bound in from the eastward. A good channel, with from four to nine fathoms, exists between it and Big Ledge.

A little over half a mile **NW.** ¼ **W.** from Big Black Ledge lies a large and dangerous piece of shoal ground, part of which is bare at half-tide, and the rest having from two to twelve feet upon it. The shoal part is sometimes called The Old Woman, and sometimes *The Sow and Pigs;* but the former is the name generally used. It lies almost exactly in the middle of the entrance, with equally good water on both sides; but by vessels coming from the eastward it is usually left to the westward. From Prospect Harbor Light-house it bears **S.**, distant nearly two miles; and is marked by a red spar-buoy (No. 2) placed in five fathoms on its western end. **The Old Woman.**

When past The Old Woman the passage is clear from shore to shore until up with the entrance to Inner Harbor, when look out for Clark's Ledges, bare at one-quarter ebb, making from the western side of the entrance to a distance of over a quarter of a mile from shore. These are very dangerous, (especially at night,) and great care is necessary to avoid them. The western shore should receive a berth of at least one-third of a mile, (seven hundred yards.) These ledges are marked by a black spindle with wheel and pendant on top, placed on their eastern end. **Clark's Ledges.**

On the northern side of the entrance, do not approach Prospect Harbor Point (on which the light-house stands) too closely, as there is *a long ledge making off from it to the southward and westward for two hundred and fifty yards*, which is bare at low water for two-thirds of its length, and is not buoyed.

The best anchorage in Inner Harbor is about six hundred yards to the westward of the light-house, in from three to five fathoms, soft bottom. The whole of the upper part of the cove is a mass of flats and kelp ledges, and a large part of it bare at low water. Vessels of light draught may anchor farther up, according to their draught, (by using the lead carefully,) as the water shoals gradually.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PROSPECT HARBOR.

I. ***Coming from the Eastward, to enter by the main channel.***—Steer **W.** ½ **S.** for the middle of Schoodic Island until Prospect Harbor Light-house bears **NW.** by **N.** ¾ **N.**; when steer for it, which course will lead safely in, with not less than eight and a half fathoms water, passing three hundred and fifty yards to the westward of Cranberry Point; a quarter of a mile to the eastward of Little Black Ledge; and nearly half a mile to the eastward of Big Black Ledge. When within six hundred yards of the light, steer **NW.** by **W.** ¼ **W.** into Inner Harbor, and anchor according to draught. The depth at the usual anchorage is from three to five fathoms, and the holding-ground good.

Sailing Directions--Prospect Harbor.

II. ***Coming from the Eastward, to enter between Big Ledge and Little Black Ledge.***—From about a mile and a half outside of Eastern Island, (Gouldsboro' Entrance,) steer **W.** ½ **S.** for the middle of Schoodic Island until past Little Black Ledge, with Prospect Harbor Light-house bearing **N.** by **W.** ½ **W.** Now steer for the light, passing between Big and Little Black ledges, and carrying not less than nine fathoms water; and when within about six hundred yards of it steer **NW.** by **W.** ¾ **W.** into Inner Harbor, passing to the northward of Clark's Ledges, two hundred and seventy-five yards distant. Anchor in from three to five fathoms, soft bottom, with the light bearing **E.** ½ **N.**

III. ***Or, to come from the Eastward and enter by the western channel.***—Continue the course **W.** ½ **S.** for Schoodic Island until the light-house bears **N.** ½ **E.**; when run for it, passing two hundred yards to the westward of The Old Woman and nearly six hundred yards to the westward of The Old Man, carrying not less than seven fathoms water. Continue this course until past Clark's Ledges and Inner Harbor is fairly open, when steer about **NW.** by **W.** ¾ **W.** for the middle of the cove, and anchor as before.

Strangers are not advised to try the channel between Big and Little Black ledges, though there is a depth of twelve fathoms in it.

DANGERS

IN APPROACHING AND ENTERING PROSPECT HARBOR.

II. ***Coming from the Westward.***—The coast is pretty clear from Schoodic to Prospect Harbor, and the first danger met with is Bunker's Ledges, with two feet at mean low water, lying off the mouth of Bunker's Harbor. They are very dangerous ledges, as they extend to the eastward nearly seven hundred yards and are not buoyed. From Prospect Harbor Light-house the shoal of these rocks bears **SW.** by **S.** ¾ **S.**,—seen over Petty's Point,—and the rule for avoiding them is not to shut the light in behind that point, or not to go to the westward of the light-house bearing **N NE.** The channel between these ledges and The Old Man, which lies on the eastern side of the entrance, is a mile wide, and has from seven to fourteen fathoms.

Bunker's Ledges.

Roaring Bull Ledge lies in the middle of the entrance to Birch Harbor, about an eighth of a mile from its western point, and is dry at low spring tides. There is no safe passage between it and the shore, although twelve feet at mean low water exists in a narrow and crooked channel. A black spar-buoy (No. 1) is placed in three fathoms about twenty yards to the eastward of the shoal of the ledge; and from it Prospect Harbor Light-house bears **NE.** by **N.** ¾ **N.**, distant one mile and three-eighths. This ledge is called, in the Buoy List, **Harbor Ledge.**

Roaring Bull Ledge.

The Old Man, described on the preceding page, is bare at half-tide, lies on the eastern side of this channel, and bears from Prospect Harbor Light-house **S.** ¼ **E.**, a little over two and a quarter miles distant. It is tolerably steep-to, and always shows itself by breakers. A little over one-third of a mile to the northward is The Old Woman, also described on the preceding page. It is sometimes called *The Sow and Pigs*, is partly bare at low water, and in other places has from two to twelve feet. From The Old Man it bears **N.** by **W.**, about six hundred and fifty yards distant; from Prospect Harbor Light-house **S.**, nearly two miles distant; and from Big Black Ledge **NW** ¼ **W.**, a little over half a mile distant. There is a good channel, with from seven to ten fathoms in it, between The Old Man and The Old Woman. A red spar-buoy (No. 2) is placed in five fathoms on its western end.

The Old Woman.

When past The Old Woman the channel is clear to the entrance to Inner Harbor, and you may stretch boldly from shore to shore. When up with Inner Harbor entrance, however, look out for Clark's Ledges, making off from the western shore, opposite to the light-house, to a distance of over a quarter of a mile, and bare at one-quarter ebb. They are marked by a black spindle with wheel and pendant, placed on their eastern end. The western shore should receive a berth of at least one-third of a mile to avoid them.

Clark's Ledges.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PROSPECT HARBOR.

IV. ***Coming from the Westward.***—When past Schoodic Island, steer **NE.** ½ **N.** until Prospect Harbor Light-house bears **N.** by **E.**, when run for it, passing half a mile to the westward of The Old Man, the same distance to the eastward of Bunker's Ledges, a little over five hundred yards to the westward of The Old Woman, and carrying not less than nine fathoms water. This course continue until within four hundred yards of the light-house, when **NW.** by **W.** ¼ **W.** leads into Inner Harbor, passing to the northward of Clark's Ledges, and carrying not less than four fathoms. Anchor in from three to five fathoms, soft bottom, with the light bearing **E.** ½ **N.**

LIGHT-HOUSE.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		s.	Feet.	
Prospect Harbor Light-house..	44 24 11	68 0 46	4 32 3.1	Revolving.	30	45	11

TIDES.

Corrected Establishment	10h 57m
Mean Rise and Fall of tides	10.8 ft.
Mean Rise and Fall of Spring tides	11.5 ft.
Mean Rise and Fall of Neap tides	9.5 ft.
Mean duration of Rise	6h 13m
Mean duration of Fall	6h 12m

VARIATION OF THE COMPASS.

The magnetic variation for 1879 is 16° 29′ W., with an approximate annual increase of 2′.

BIRCH AND BUNKER'S HARBORS.

These little harbors, suitable for light-draught vessels, are small coves making in to the westward of Prospect Harbor, and are of little importance. Birch Harbor lies on the western side of Petty's Point, and Bunker's Harbor about three-quarters of a mile to the southwestward of the same point. The former is a long and narrow cove, making in a W NW. direction about a mile, and affords anchorage in from six to eighteen feet at low water; but is only used by the fishermen who live on its banks;—as coasters always run into Prospect or Winter Harbor. The shores are low and rocky, and have in places a thin fringe of small trees, but are for the most part covered only with scrub and bushes. High lands rise somewhat steeply behind the low banks, especially on the north and west, where the summit of the Schoodic Hills is seen. There is a small settlement on its banks.

Bunker's Harbor, three-quarters of a mile to the southwestward of Birch Harbor, is a small, narrow cove, running nearly N NW. and S SE. and about half a mile long. Its shores partake of the same character as those of Birch Harbor,—being low, rocky, covered with scrub, and backed by the high, steep, rocky lands of Schoodic. Anchorage in from two to four fathoms at low water may be found, but the cove is not fit for strangers. There is a small settlement on its shores.

FRENCHMAN'S BAY.

From the entrance to Birch Harbor the shore runs S. by W. ½ W. for about three-quarters of a mile, terminating in a low, rocky point, called **Spruce Point.** The only growth upon it is scrubby bushes and small fir. This point is one mile in a nearly E NE. direction from the northern end of Schoodic Island; and between it and the eastern shore of the peninsula of Schoodic is formed a large semicircular cove, called **Schoodic Harbor,** and sometimes **Rowland's Harbor,** in which there is from three to seven fathoms at low water. Its shores are rocky and uncultivated, and the cove itself is rarely used. There are several dangerous sunken rocks (which are not buoyed) lying in this cove; but it may be safely entered from the eastward with not less than five fathoms by keeping either shore aboard. Coming from the westward the passage is clear, and may be safely traversed by keeping in the middle.

Peninsula of Schoodic.

The western shores of Schoodic Harbor are formed by the peninsula of Schoodic, the eastern point of entrance to Frenchman's Bay. This prominent peninsula, one of the great landmarks on the coast of New England, is a range of high, barren, rocky hills, terminating to the southward in a low, bare, rocky point, called **Schoodic Point.** They are composed of bare, yellowish rock, with their slopes cut into very peculiar looking steps, and a few low trees dotting at wide intervals their eastern sides. A thin scrub growth may also be seen in the crevices of the rock on a near approach; but the general appearance is barren and desolate in the extreme. These hills are usually made by vessels from Europe coming upon our coast, bound either to the northward or southward.

Schoodic Island.

When Schoodic is viewed from the eastward there will appear in range with it a small island, called Schoodic Island, long, narrow and quite low, lying N NE. and S SW., within half a mile of Schoodic Point, with a good passage between them. The southern part of the island is covered with a thick growth of low spruce and fir, while the northern end is bare except for a few scattered trees here and there, and both shores are bold and steep-to. The passage between Schoodic and Schoodic Island is obstructed at its northeastern end by a bare ledge, called **Schoodic Ledge,** lying a quarter of a mile N. by E. from the northern end of the island. It may be left on either hand.

Tributaries of Frenchman's Bay.

Frenchman's Bay is contained between the mainland of Gouldsboro' and Sullivan on the east and Mount Desert Island on the west, and has a general course N. and S. It is fourteen miles long, (to Sullivan,) about six miles wide at its mouth, (between Schoodic Point and Otter Creek Point,) and seven miles at its widest part, (opposite to Trenton River.) Within its limits are contained Winter or Mosquito Harbor, West Gouldsboro' Harbor, Sullivan and West Sullivan harbors, Hull's Cove and Bar Harbor. Winter Harbor is one of the best on

the coast, and is easily accessible. The entrance to the bay is between Schoodic Point on the east, and Otter Creek Point, the southeastern point of Mount Desert Island, on the west. There are many islands in the middle of the passage and along the shores; and into its northern end empty Trenton River, Skillings River and Sullivan River,—three large but shallow streams of some commercial importance.

Coming from the eastward, bound into Frenchman's Bay, the most conspicuous object is **Mount Desert Island**, appearing as a very high mountain, rising with a regular but steep slope to a bare summit fifteen hundred feet above the sea, known as Green Mountain. The island is composed of a great number of peaks, of which this is the highest; but from the eastward none of these are noticeable,—being in range with Green Mountain, or else so situated in the view as to form part of the regular slopes of that mountain. They become visible passing along the eastern shore of the island, or to the westward along its southern shore.

Green Mountain.

When off the entrance, looking up into the bay, a number of islands will be seen stretching in a line across the whole width of the bay, and apparently closing the passage. They are about five miles above the entrance, and lie in a line about **E.** by **S.** and **W.** by **N.**, with excellent and deep channels between them.

On the eastern side of the entrance to the bay lies the next most prominent object, **Schoodic**, before described (on the preceding page) as a range of high, barren hills, with their southern slopes cut into steps, destitute of trees, and terminating to the southward in a low, bare, rocky point, called Schoodic Point. When seen from the westward, a few low, scrubby-looking trees appear clinging to the edges of the highest steps.

Schoodic Point.

The **Eastern Shores of Frenchman's Bay**, from Schoodic Point, have a general course about **N.**, for a mile and three-quarters, to the entrance to Winter Harbor. In this distance they are indented by two coves of little importance,—one, a long, narrow cove, making in on the western side of Schoodic Point, and called **Arey's Cove**; and the other, nearly a mile above the point, called **Pond Island Cove**. This latter is half a mile wide at its mouth and of irregular shape, but its width at the entrance is diminished by a small, low, round, wooded island, lying near the northern shore, called **Pond Island**. The shores from Schoodic Point to the entrance to Winter Harbor are high, rocky, barren and steep-to.

Between the two coves just mentioned rises a high, bare, rocky point of a peculiar yellowish appearance, dotted with trees at long intervals, and noticeable from the fact that it hides Mark Island Light-house, in the entrance to Winter Harbor, until that light bears **N.** by **W.**, when it will open out from behind the point.

Winter Harbor, or **Mosquito Harbor**, as it is often called, is a large cove, running about **N.** by **E.** and **S.** by **W.**, two miles long, and with an average width of a little over half a mile. (See page 123.) Its entrance is a mile and three-quarters above Schoodic Point, and is continued between the high, rocky land of Schoodic on the east, and a group of islands lying to the southward of Grindstone Neck on the west. The neck is a long peninsula, lying **N.** and **S.**, high, steep, rocky and nearly bare of trees, and forms the western shore of the harbor proper. Several ledges and small barren islets lie off its southern end close-to.

Winter Harbor.

Grindstone Neck.

The southernmost of the islands, forming the western side of the entrance, is called Turtle Island, and is rocky and thickly wooded. At its southern end it is about forty feet high, with bare summit; while at the northern end it is eighty feet high; and the centre of the island being only twenty feet above sea-level gives it a saddle-like appearance. It lies **NNW.** and **SSE.**, is three-quarters of a mile long, and tolerably steep-to on its eastern side, but is obstructed by bad ledges on its southern side. These ledges are known as *Turtle Island Ledges*, and are bare at half-tide.

Turtle Island.

Spectacle Island, though not visible from the southward, owing to its position, lies about one hundred and fifty yards to the northward of Turtle Island. It is small, of irregular shape, lies nearly **NNE.** and **SSW.**, is three hundred and fifty yards long, and quite low. The southern end has a few trees near its western shore, but the northern half is higher and has no trees. The island is nearly cut in two by a large cove on its eastern side, and is surrounded by ledges out at half-tide. There is no passage either on its northern or southern side.

Spectacle Island.

Nearly abreast of Turtle Island, and about midway of the entrance to the harbor, are seen two islets,—the northernmost being higher than the other, which is quite low, and has a white light-tower on its southern end. Both islets are joined at low water by a ledge of rocks. The northernmost, called Ned's Island, lies **N.** by **W.** and **S.** by **E.**, is four hundred yards long and forty feet high; and between it and **Grindstone Point** (the southern extremity of Grindstone Neck) is a good passage three hundred and fifty yards wide, with five fathoms water, but obstructed by a dangerous ledge off Grindstone Point, called *Grindstone Ledge*.

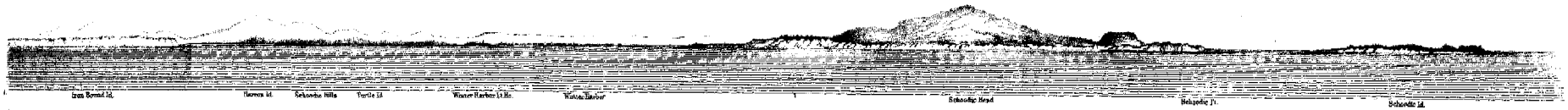
Ned's Island.

Winter Harbor Light-house.

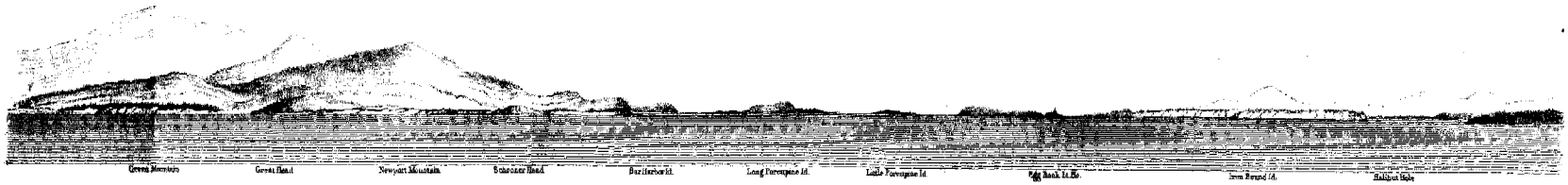
The southern islet, called **Mark Island**, is quite low and flat, bare of trees, and about three hundred yards long. Near its southern end stands the guide to this harbor, known as Winter Harbor Light-house, a white tower, nineteen feet high, connected with a brown dwelling-house by a covered passage; and shows a fixed white light, of the fifth order of Fresnel, from a height of thirty-seven feet above the sea. It is visible eleven miles, and its geographical position is

Latitude ..... 44° 21′ 40″ N.
Longitude ..... 68° 5′ 16″ W.

There is no fog-signal at this light-house.



Approaches to Winter Harbor, the Lt Ho. bearing N by E.½ E. distant 7½ Miles.



Approaches to Frenchmans Bay, from off Schoodic, Egg Rock Lt Ho. bearing N ¼ E. distant 7 Miles.

Description of Frenchman's Bay.

Between Ned's and Mark islands on the east and Turtle and Spectacle islands on the west there is an excellent channel, with from seven to seventeen fathoms water, leading either into Winter Harbor by the passage between Grindstone Point and Ned's Island, or along the western face of Grindstone Neck, between it and the small islands to the westward of it, up towards East Sullivan. Not less than four fathoms is found in the shoalest part of this passage.

The group of small islands lying off the western shore of Grindstone Neck is known, respectively, as Pulpit Ledge, Flat Island, Heron Island and Crow Island;—Heron Island being the largest and most westerly. They are surrounded by ledges, and dangerous to approach; but Heron Island is bold-to on its western side, and may be approached anywhere on that side within two hundred yards with not less than six and a half fathoms. There is no passage among the islands; but a good channel, one hundred and fifty yards wide, with from three to six fathoms, runs between them and Grindstone Neck, obstructed only by **Pulpit Ledge**, which is out at half-tide.

Heron Island.

Heron Island lies about **N NE.** and **S SW.**, is about three hundred and fifty yards long and of irregular shape;—being about one hundred yards wide at its southern end, and suddenly expanding to a width of three hundred and fifty at its northern end. It is low, flat, rocky, and well wooded with spruce and fir except at its northeastern end, which extends into a long, low, flat, sandy point faced with rocks. Ledges surround it, but it is boldest-to on its western side.

Flat Island.

Nearly three hundred yards to the eastward of Heron Island lies Flat Island;—the space between the two being filled with bare and sunken ledges. It is nearly two hundred yards long **N.** and **S.**, of an oval shape, and covered only with grass. Great masses of ledges, for the most part bare at half-tide, surround it;—extending to the northward an eighth of a mile; to the eastward and southeastward about the same distance; to the southward four hundred yards; and to the westward one hundred and fifty yards, or within about one hundred and twenty yards of Heron Island. There is a narrow and unsafe passage between it and Crow Island to the northward.

Crow Island.

Crow Island is in reality a group of three bare rocky islets surrounded by small bare rocks, and joined, at low water, by ledges. They lie nearly **N.** and **S.** of each other;—the southernmost, which is about one hundred yards in diameter, being about an eighth of a mile from Grindstone Neck. The northernmost islet is one hundred yards to the northward of this; and close to it on its southwestern side lies the third islet, about fifty yards long and of irregular shape. All three are mere masses of rock, but little elevated above high water, and destitute of vegetation. The channel between these islets and Grindstone Neck is in no place less than one hundred and fifty yards wide with from three to five fathoms at low water.

Egg Rock and Light-house.

About a mile and a half **W.** by **N.** $\frac{1}{2}$ **N.** from the southern end of Turtle Island, and a mile and three-eighths **S.** by **W.** $\frac{1}{2}$ **W.** from the southern end of Iron-Bound Island, lies Egg Rock, on which is built the light-house which is the principal guide to Frenchman's Bay. The rock is an islet of bare rock, a quarter of a mile long nearly **N.** and **S.**, and about forty feet high at its highest part; and the light-house is a one-story square brick dwelling, on top of which is a low, square tower,—both being painted white. It shows a fixed red light, of the fifth order, from a height of seventy-six feet above sea-level, visible fourteen miles. Its geographical position is

Latitude ..... 44° 21′ 15″ N.
Longitude ..... 68° 7′ 57″ W.,

and it bears from

	Miles.
Schoodic Point, NW. $\frac{1}{2}$ W	3 $\frac{1}{2}$
Baker's Island Light-house, NE. $\frac{3}{4}$ N.	nearly 7 $\frac{1}{2}$
Otter Creek Point, NE. $\frac{3}{4}$ E	3 $\frac{1}{4}$
Southeastern end of Great Head, NE. by E. $\frac{1}{2}$ E	2 $\frac{1}{2}$

From this light-house

	Miles.
Eastern end of Round Porcupine Island bears NW. by N. $\frac{1}{2}$ N.	nearly 2 $\frac{3}{8}$
Western end of Round Porcupine Island NW. by N. $\frac{3}{4}$ N.	nearly 2 $\frac{3}{8}$
Southern end of Iron-Bound Island N. by E. $\frac{1}{2}$ E.	1 $\frac{3}{8}$

Deep Cove.

Above Winter Harbor the general trend of the eastern shore of Frenchman's Bay is about **N.** $\frac{1}{2}$ **W.** for a mile and a quarter, along the western face of Grindstone Neck, to Deep Cove, a semicircular cove, full of ledges and bare rocks, and unfit for strangers. Its shores are rocky, wooded, gently sloping and of moderate height. From nine to fourteen feet may be found at the anchorage; but there is little shelter, and the holding-ground is not good.

Iron-Bound Island.

Opposite to Deep Cove and Grindstone Neck, and about a mile from the eastern shore, lies a large, high, rocky and wooded island, called Iron-Bound Island,—the easternmost of a group of islands stretching in an irregular line across the bay, between Grindstone Neck and Bar Harbor, and dividing it into two parts, known, respectively, as the **Upper Bay** and **Lower Bay**. Iron-Bound Island is a mile and three-quarters long in a **NE.** and **SW.** direction; undulating,—its height varying from sixty to one hundred and sixty feet,—well wooded and steep, showing at its southwestern end perpendicular bluffs of rocks streaked with white. It is very bold and steep-to,—four and five fathoms being found within sixty yards of its eastern shore. On its southern side is a small unimportant cove, called **Seal Cove**; and on its western side, about midway between its northern and southern ends, another called **Jacob's Cove.**

On the north Iron-Bound Island is separated, by a passage three hundred and fifty yards wide, called **Halibut Hole**, from Jordan's Island, a large, high and well-wooded island, lying nearly **N.** and **S.**, and about four hundred yards from the eastern shore at its nearest point. It is nearly a mile long, with a somewhat oval shape, and about half a mile wide at its widest part. Near the southern end it attains a height of one hundred and eighty feet at a bare, rocky summit, whence it descends with a gradual slope to its southeastern point, which is low and has a few trees.

Jordan's Island.

A small, low island, called **Yellow Island**, with a clump of firs on top, lies close in with the western shore of Jordan's Island, near its northern end. There is no passage between them.

The eastern shore of Frenchman's Bay, from Deep Cove to Jordan's Island, runs nearly **N.**, and is for the most part well wooded, high and steep. Opposite to Jordan's Island it rises abruptly to a height of one hundred and sixty feet, and then, more gradually, one hundred and forty feet higher, giving a total of three hundred feet as the height of the bare summit five-eighths of a mile back from the shore. The passage between this shore and Iron-Bound Island varies in width from one and three-eighths miles at its southern end to less than three-quarters of a mile at its northern, and has from thirteen to eighteen fathoms water, with very bold shores. But, between the southern end of Jordan's Island and the main, the passage is only four hundred yards wide, and is closed to large vessels by a bar, over which not more than five feet can be taken at mean low water. This is called *Jordan's Bar*.

To the northward of Jordan's Island, and separated from it by a passage half a mile wide, lies Stave Island; large, well wooded and moderately high, about three-quarters of a mile from shore, and a mile and a half long **N NE.** and **S SW.** Off its western shore, close in, and near its northern end, lie several rocky islets, joined to each other and to the shore at low water; and several others on its eastern side,—the largest of which, called **Spectacle Island**, is about one hundred and fifty yards long and well wooded. It is about an eighth of a mile from the Stave Island shore.

Stave Island.

Between Stave Island on the west, Jordan's Island on the south, and the eastern shore of Frenchman's Bay on the east, is a very comfortable and secure anchorage, with not less than four fathoms water, called **Stave Island Harbor.** (See page 125.) A bar, dry at low tides, extends from the island to the main across the northern end of the harbor; and is called *Stave Island Bar*.

The eastern shore of Frenchman's Bay, from abreast of Jordan's Island, runs nearly **N NE.** for about three miles and a half to the entrance to West Gouldsboro' Harbor. Just above Jordan's Bar is a cove, about five-eighths of a mile wide, called **Hammond's Cove**; and nearly a mile above this, and on the eastern side of Stave Island Harbor, is another, called **Bunker's Cove**, where there is a small settlement.

West Gouldsboro' Harbor is a large cove of irregular shape, about three-quarters of a mile wide at its mouth. Nearly the whole of this width is, however, occupied by a large island, called **Hog Island**, lying directly across the mouth in a **N.** by **W.** direction, and nearly half a mile in length. This island makes the harbor perfectly land-locked, leaving, at high water, two narrow passages,—one on its northern and one on its southern side.

West Gouldsboro' Harbor.

The northern point of the northern entrance (which is bare at low water) is called **Ash Point**, or **Hall's Point**, and is the southern end of Ash Neck. It shows as a high, bare, bluff head, with sandy faces, and a thick growth of birch and spruce on its northern end. A few houses appear above the head. Ash Neck is of moderate height, undulating, wooded in places, but with its northern and southern ends nearly bare of trees, grassy, and dotted with groups of houses.

Ash Neck.

The southern point of the southern entrance (which is the principal channel) is called Taft's Point; and is low and grassy, with perpendicular faces, and a few trees near the middle of the point. A shoal makes from it to the northward for two hundred yards;—thus diminishing the width of the channel to about one hundred yards. To the southward of the point the land rises with a gradual slope to a height of one hundred and eighty feet, and is for the most part wooded. Two small, bare rocks lie off this shore about six hundred yards to the southward of Taft's Point and are surrounded by ledges. The name **Black Ledge** has been given to them; and they are joined, at low water, to the shore.

Taft's Point.

The shores of West Gouldsboro' Harbor are moderately high, diversified with cleared and thickly wooded lands, and dotted here and there with groups of houses,—the latter forming what is known as the settlement of **West Gouldsboro'**. The harbor, though affording good anchorage in about nine feet water, is not safe for strangers to attempt without a pilot,—as Stave Island Harbor and Bass Cove or East Sullivan Harbor are more convenient and accessible.

The southern part of West Gouldsboro' Harbor is often called **Jones' Cove.**

The approaches to West Gouldsboro' and East Sullivan are still further protected by a line of islands extending from Stave Island northward to Bean's Point, the southwestern extremity of Waukeag Neck, which separates Bass Cove from Flanders Bay. These islands are numerous, and the passages among them intricate; and, although deep and safe for those who are acquainted with them, are not recommended for strangers.

The first island to the northward of Stave Island is Calf Island, about a mile long **N NW.** and **S SE.**, but quite narrow. Seen from the southward, its southern end appears as a long, green, gently sloping point, with a house and barn on it, and the higher land back of it crowned with a thick growth of fir and spruce; and its extremity terminating in a flat, grassy point, with sandy, water-worn faces, and a thin growth of birch on the end.

Calf Island

Description of Frenchman's Bay.

The houses in East Sullivan will appear a little to the eastward, and still farther east Schoodic and the Tunk Mountains will show over the low land. Seen from the northward, the island appears moderately high and thickly wooded,—the northern end being bold, bluff, and covered with a thick growth of birch.

The southeastern point of Calf Island is sufficiently remarkable. It is bare of trees at its very end, but a clump of birch stands a few hundred yards back of it. A long bar, bare at low water, extends off in a line with the direction of the point to a grassy islet, called **Little Calf Island**, with partly sandy and rocky shores, and bare of trees except two or three tall spruce on its southern end. This again is connected by a similar bar with a small, bushy island, called **The Thrumbcap**, lying still farther to the southward.

Preble's Island.

Preble's Island, lying next to the northwestward of Calf Island, is thickly wooded, rocky and of moderate height. It lies about **NW.** and **SE.**, and is nearly a mile long; and between it and Calf Island is one of the principal entrances to East Sullivan. It is also called **Simpson's Island**. Next to the westward is Ram Island, sometimes called **Drum Island**, thickly wooded and of moderate height, but small. It lies about three hundred yards to the southward of Bean's Point and four hundred yards to the westward of Preble's Island. The eastern passage to Sullivan leads to the westward of this island, between it and Bean's Island, in Flanders Bay.

Ram Island.

A dangerous ledge, two feet out at low water, and somewhat absurdly known as **Sunken Ledge**, lies one-third of a mile **W SW.** from this island, and is not buoyed. The best channel lies between it and the island; but vessels may pass to the westward of it by giving it a good berth.

This group of islands—viz: Stave, Calf, Preble's and Bean's islands—lying off the eastern shore at distances varying from three-quarters of a mile to a mile and three-quarters, forms a complete barrier to westerly and southerly winds, and makes the anchorage between them and the main perfectly safe and quite smooth. Mariners would do well to bear this in mind, if not able to get into Stave Island Harbor or Sullivan.

Bass Cove, or East Sullivan Harbor.

Next to the westward of West Gouldsboro' Harbor is Bass Cove, or East Sullivan Harbor, as it is often called, which is contained between the township of East Sullivan on the east and Waukeag Neck on the west. It is of irregular shape, lies nearly **N.** and **S.**, and is nearly two miles and a half long to its head. The village of **East Sullivan** lies along its eastern shore, on the low, flat plains extending from the foot of Schoodic Mountains to the bay. The foot hills are of moderate height and wooded; the low lands dotted with houses and groves of trees; and both shores are cleared and have a gentle slope. The principal trade is in lumber.

The entrance to Bass Cove is between Ash Point on the east, and Eastern Point, the southeastern extremity of Waukeag Neck, on the west, and is one mile wide. The channel is, however, somewhat obstructed by ledges, many of which are not buoyed, and it is not considered safe for strangers. There are three entrances,—one from Stave Island Harbor, inside of all of the islands; one between Calf and Stave islands; and one between Preble's or Simpson's Island and Calf Island. That between Calf and Stave islands is most commonly used, and is buoyed. (See also pages 126–128.)

Eastern Point Harbor.

Eastern Point Harbor, contained between the southern shores of Waukeag Neck and Ram and Preble's (or Simpson's) islands, is a most excellent winter harbor,—being free from ice, easily accessible, and having over three fathoms at low water at the anchorage. It may be entered either between Ram and Preble's islands, or between Preble's and Calf islands by the East Sullivan passage. The former channel is the best for vessels from the northeastward, as it is entirely unobstructed as far up as the bar dividing the harbor. From the southward, the best entrance is between Calf and Simpson's islands, as there is no danger except the ledge to the southward of the latter, which is easily avoided.

It must be remarked that from Waukeag Neck to Preble's Island there extends a bar, composed of rocks and mud, connecting these points with several small, low, thickly wooded islets, and effectually closing the passage. Thus Eastern Point Harbor is divided into two parts; so that vessels from the eastward cannot pass through the harbor into Frenchman's Bay by the Ram Island passage, nor can those from the westward pass through to East Sullivan or West Gouldsboro' Harbor. Bound to these latter places, vessels must enter by the passage between Calf and Preble's islands.

Flanders Bay or Sullivan Harbor.

Flanders Bay, or Sullivan Harbor, an arm of Frenchman's Bay, making to the northward from the northern shore of Frenchman's Bay, is the first indentation to the westward of Bass Cove, and is contained between Franklin and Sullivan on the east and Hancock on the west,—the entrance lying between Waukeag and Crabtree necks. The course of this bay is first **NNE.** about three miles to Sullivan; then about **NW.** by **N.** nearly three miles, through the narrows of Franklin Bay, to Egypt Bay; thence to Franklin the distance is about three miles; but the course of the bay constantly changes,—forming nearly a semicircle;—and it finally terminates in a shallow bay, called **Hog Bay**, three-quarters of a mile wide and about a mile long, which again ends in a small narrow creek which flows into its western end. No portion of Flanders Bay has as yet been surveyed; and it is not safe to enter it or to pass above Sullivan without a pilot, as there are dangerous rapids, known as **The Falls**, just opposite that town. These falls are, however, being improved by the U. S. Engineers.

Bean's Point.

The eastern point of entrance to Flanders Bay is the southwestern extremity of **Waukeag Neck**, known as Bean's Point, and has been already mentioned on the preceding page. It is low and for the most part cleared, but has occasional clumps of trees, and one or two houses near the western extremity.

Crabtree Point.

Crabtree Point, the western point of entrance, is also the southern point of **Crabtree Neck**, and is thickly wooded and of moderate height. It separates this bay from Skillings' River, which lies to the west-

ward. Between this point and Bean's Point the width of the entrance is about a mile and a half; but it is obstructed by an island, called Bean's Island, about three-eighths of a mile long **E.** and **W.**, which lies almost exactly midway between the two points. This island is low and rocky; but when seen from a distance looks white and sandy with a grassy surface. At the eastern end it forms a sort of head fringed with trees, and has scattered trees here and there on its summit; but the rest of the island is low and bare, and but little above high-water mark. The peculiar white appearance of this island makes it an excellent mark for Sullivan Entrance, as there is nothing like it in the bay.

Bean's Island.

A detached rock or islet, called **Bean's Island Ledge**, lies about midway between Bean's Island and Waukeag Neck; and may be passed on either hand with not less than three fathoms. It is best, however, to give it a berth of one hundred yards.

Above the entrance both shores of Flanders Bay are of moderate height and rise with a gentle slope to wooded summits at some distance back from the shore. In many places they are cleared and cultivated; in others rocky and barren. The village of **Sullivan** on the eastern shore and that of **Hancock** on the western are both plainly visible from the entrance.

Sullivan lies on the eastern bank, about three miles above the entrance; and its harbor is formed by a long cove making to the eastward along the southern front of the village and affording well-sheltered anchorage with not less than three fathoms.

Next to the westward of Flanders Bay lies Skillings' River, contained between Crabtree Neck and the township of Trenton. It is a somewhat shallow stream of little importance, and must not be entered without a pilot. At its mouth, between Crabtree Point and **Meadow Point**, it is about a mile and three-quarters wide; but this width rapidly diminishes until, about two miles above its mouth, it is only three hundred and fifty yards wide. Above **Mosely's Point**, however, about two miles and three-quarters above the mouth of the river, it again widens into a sort of bay of irregular shape, and about a mile and a quarter wide. There is no settlement on its shores, and no trade except a small local trade carried on by the few inhabitants. Sailing directions cannot be given, as but little is known of it otherwise than that there is said to be good anchorage for small vessels in the large cove on the western side of the river, just north of Meadow Point, called **Raccoon Cove**, and which is of irregular shape, lies **W NW.** and **E SE.**, and is nearly a mile and a half long. A small island, called **Shooting Ledge**, and composed of bare rock, lies nearly in the middle of the entrance.

Skillings' River.

The **Western Shores of Frenchman's Bay** are formed by the eastern side of Mount Desert Island, a very large, mountainous island, lying nearly **N NE.** and **S SW.**, and about fourteen miles long. It is of an oval shape, about ten miles wide at its widest part, rugged, rocky, and traversed by many deep and narrow ravines separating the different hills. Most of its shores are wooded; but its most conspicuous peak, **Green Mountain**, when seen from the eastward appears bare and barren, with ledges cropping out here and there over the surface. This bare mountain, about fifteen hundred feet high, rises with an extremely regular slope, and is surmounted by a single house, which is visible at a considerable distance.

Mount Desert Island.

Mount Desert Island lies between Frenchman's and Blue Hill bays, and, as above mentioned, is composed of many peaks, most of them wooded and all of them steep. Of these the principal are, beginning at the eastern side, **Otter Peak, Newport, Kebo, Dry, Green, Pemetic, Bubble, The Triad, Sargent, Brown, Robinson, Dog**, (the last three on opposite shores of Somes' Sound.) **Flying, Beach** and **Western** mountains.

On its northern side is **Salisbury Cove**, (the harbor of Eden,) **Emory's Cove** and **Thomas' Bay**; on its eastern side, in Frenchman's Bay, are **Hull's Cove** and **Bar Harbor**; on its southern side, **Otter Creek, Stony Beach Cove, Seal Harbor, Bracy's Cove or Long Pond Harbor, Northeast Harbor, Southwest Harbor, Somes' Sound** and **Bass Harbor**; and on the western side, the harbors of **Duck Cove, Goose Cove, Seal Cove, Sawyer's Cove, Pretty Marsh Harbor, Mill Cove, Squid Cove** and **Western Bay**. Of these, the only ones of any importance are Bar Harbor, on the eastern shore, and Somes' Sound, Northeast, Southwest and Bass harbors on the southern shore.

The eastern side of this island (forming the western shore of Frenchman's Bay) is for the most part very steep and precipitous, and clothed thickly with wood nearly to the summit.

Otter Creek Point, the southeastern extremity of the island, is also the western point of entrance to Frenchman's Bay, and will appear, when seen from the eastward, as a thickly wooded neck of land, rising to a height of about two hundred feet, with a precipitous face, over one hundred feet high, on its eastern side,—this latter being known as **Otter Cliff**. To the northward of the point, distant about one mile and a half, will be seen the thickly wooded eminence, over five hundred feet high, called **Otter Peak**.

Otter Creek Point.

From Otter Cliff the eastern shore of the island trends to the northeastward for a distance of one mile and three-eighths, then runs nearly due **E.** for a quarter of a mile, and then about **S.** for half a mile,—thus forming a snug little cove about half a mile in diameter, on the western side of which is situated **Thunder Cave**. This cove, called Newport Cove, has a depth of from three to eight fathoms at low water, and affords good shelter in northerly winds. It is almost entirely unobstructed;—there being but one danger, a low rocky islet about one hundred yards in diameter lying about an eighth of a mile **S.** by **W.** from the southwestern end of Great Head, and having long ledges extending to the southward. At the head of the cove is a shingly beach known as **Newport Beach**; and beyond this a very gently sloping cleared field backed by woods.

Newport Cove.

Great Head, which forms the eastern side of Newport Cove, is a bold, rocky headland with rugged outline, much cut up by small coves and ravines, and rising at its summit to a height of one hundred and sixty feet. The name, which was originally only applied to the steep bluff at its eastern end, (which is one hundred and forty feet high,) has now extended to the whole of the headland. For the most part it is thickly wooded; but the

Great Head.

head itself (on the eastern side) is a bold, bare bluff, nearly perpendicular, and presenting to the view nothing but barren, forbidding rock. It is bold-to,—not less than ten fathoms being found within fifty yards of it, and in some places even more.

From Great Head the eastern coast of the island has a general direction about **N.** by **E.** for a mile and a quarter to Schooner Head;—the land between the two being all high and well wooded, with steep faces fringed with rocks. Schooner Head, which is a spur from the base of Newport Mountain, appears as a bare, nearly perpendicular, rocky headland about one hundred feet high, on the eastern face of which is a large white figure, which, at a distance, looks like a schooner with her three lower sails set;—hence the name. It is bold-to;—eight fathoms being found within about fifty yards. **Schooner Head.**

From Schooner Head to Bar Harbor, three miles and a half above, the general trend of the shore is about **N.**, but the shore line is somewhat indented by small unimportant coves. The outline is very irregular,—the heights varying from twenty to two hundred and twenty feet,—and the surface is densely wooded until within a mile of Bar Harbor, where gently sloping cleared fields begin, alternating with clumps of thick woods, and dotted at long intervals with low houses. This shore is all very bold-to,—not less than four fathoms being found within a hundred yards of it, except about three-quarters of a mile above Schooner Head, where lies *a detached ledge, with two and a half feet*, about an eighth of a mile from shore. There is, however, a channel with not less than five fathoms inside of this ledge by keeping about a hundred yards from the shore.

About a mile and three-eighths above Schooner Head and a quarter of a mile from shore lies The Thrumbcap, or **Thrumbcap Island**, as it is sometimes called. It is about one hundred yards in diameter, with a somewhat rounding surface twenty feet high, and bare of trees except near its western end, where there are two or three spruce; and may be approached anywhere within seventy yards with not less than three fathoms. On its southern and eastern sides nine fathoms is found close to the rocks. A good unobstructed channel nearly a quarter of a mile wide exists between this island and Mount Desert, through which five fathoms may be taken at low water. This island is locally known as Whale-boat Island. **The Thrumbcap or Whale-boat Island.**

A mile and three-eighths above The Thrumbcap and two miles and five-eighths above Schooner Head is Rodick's Cove, with good anchorage in twelve feet at low water. Its southern shore is composed of low, cleared fields, while its northern banks and those at the head of the cove are wooded. A number of houses are seen on its banks. About three-quarters of a mile to the eastward of this cove, and a mile and a half above The Thrumbcap, lies Round or **Bald Porcupine Island**, about two hundred feet high, round and nearly bare, with precipitous rocky faces; and, on its southern face, a broad patch of white rocks, presenting a remarkable appearance. A thick growth of birch, spruce and maple is seen on its northeastern end, clinging to its sides and summit. It is bold-to on all sides except to the westward, where, at a distance of nearly a quarter of a mile, is a low, bare, rocky islet, called **Porcupine Dry Ledge**, and surrounded by sunken rocks. There is a passage with not less than eighteen feet between this rock and the island; but it is only seventy yards wide and unsafe for strangers. Good water (not less than six fathoms) may, however, be taken between this rock and the Mount Desert shore through a passage about three-eighths of a mile wide. **Rodick's Cove.** **Round Porcupine.**

Bar Harbor is the principal settlement on Mount Desert Island, and the only one which has any coastwise trade. The harbor is formed by the eastern shore of Mount Desert, and Harbor and Sheep Porcupine islands which lie to the northward and northeastward of it. Anchorage may be had in from four to five fathoms anywhere between the eastern end of Harbor Island and the settlement, and the holding-ground is good; but it is a poor harbor in easterly or southeasterly gales;—vessels in such cases passing to the northward of Harbor Island and anchoring in the bight on the northern side of the village. There are no dangers inside, and very few in the approaches. **Bar Harbor.**

This place has, of late years, become of great importance as a watering-place, and a large settlement has grown up on its shores, with a number of hotels and a great number of beautiful cottages; bringing a certain amount of coasting trade to supply the demands of the transient population. During the winter and spring it is rarely used.

Sheep Porcupine, or **Little Porcupine Island**, as it is sometimes called, is a nearly round island about a quarter of a mile in diameter; and, seen from the southward, appears as a high, bare, bluff, rocky head dotted with stunted fir and spruce. **Sheep Porcupine Island.**

Harbor Island, or **Bar Harbor Island**, as it is often called, is next to the westward of Sheep Porcupine, and appears as a rocky island, about two hundred feet high, covered with a dense growth of bushy trees. It lies nearly **E.** and **W.**, is about half a mile long, and bold-to on its northern side, where it may be approached anywhere within fifty yards with not less than four fathoms. About one hundred and seventy-five yards from its eastern end, and about a third of the way from it to Sheep Porcupine, is *a bare rock, surrounded by ledges;* and between this and the Porcupine is a channel, two hundred yards wide, with not less than thirteen feet in it; but this is unsafe for strangers to attempt. **Harbor Island.**

Next to the eastward of Sheep Porcupine Island is Burnt Porcupine, lying **NNE.** and **SSW.**, a quarter of a mile in diameter, a little over one hundred feet high, and thickly wooded except at its northern end, where there is a mass of large dead trunks and a few thin and stunted spruce and fir near the edge of the bluffs. It is rocky,—a remarkable feature being the streak of white rocks stretching in a line along its southern face about ten feet above high water. Above this streak the rocks are grey, and below it, brown. About one hundred yards to the eastward of it lies **Bum Key**, of an oval shape, about one hundred yards in diameter, and crowned with a few trees. There is a good channel an eighth of a mile wide between this and Long Porcupine Island. **Burnt Porcupine Island.**

Long Porcupine Island. Long Porcupine Island extends about **NNE.** and **SSW.**, and is about a mile long,—its southern end being distant from Rum Key nearly a quarter of a mile. The island is high and rocky,—its southwestern end terminating in a huge, bold, bluff head with perpendicular rocky faces descending into the sea. The northeastern end is much lower, and there are no trees, except a very thin growth of stunted fir and spruce scattered at wide intervals over the surface. The passage between it and Iron-Bound Island is the widest and best leading into Frenchman's Bay.

Little Thrumbcap. About a hundred yards from the northeastern end is a rocky islet of irregular shape, lying nearly **N.** by **E.** and **S.** by **W.**, and an eighth of a mile long. It is about fifty feet high and nearly bare,—there being only a few scattered spruce here and there. At low water it is joined to Long Porcupine by a ledge. This islet is commonly known as Little Thrumbcap, and sometimes as **The Hop.**

To the northward of Bar Harbor the eastern shore of Mount Desert runs about **NW.** by **N.** for a little over two miles to Hull's Cove,—passing on the way the small settlement at **Duck Brook,** about a mile above Bar Harbor. The land is irregular in outline,—being in some places gently sloping and in others steep and bluff, and varying in height from eighty to two hundred and fifty feet. From Bar Harbor to Duck Brook it presents, near to the water, alternate woods and cleared lands, dotted with houses and backed by high, steep, wooded hills; while, above Duck Brook, it is all bluff and wooded until you approach Hull's Cove, where the land descends gradually to a comparatively low and very gently sloping shore, cleared, cultivated and settled. All of this part of the coast is bold-to, and may be approached within about one hundred yards with not less than three fathoms, except off Duck Brook, where there is *a ledge, with two feet at mean low water,* an eighth of a mile from shore.

Bald Rock Ledge. Also, about a mile and three-eighths **N.** by **W.** ½ **W.** from Sheep Porcupine Island, and about a mile and a quarter from the Mount Desert shore, is a very small, bare rock, about fifty yards in diameter, called **The Nub,** and sometimes **Bald Rock.** Six hundred yards **SW.** by **W.** from this is a very dangerous ledge, bare at three-quarters ebb, known as Bald Rock Ledge, and covering an area inside the three-fathom lines of a quarter of a mile. At low spring tides this rock is bare at half-tide, and at low water covers an area of one hundred and twenty-five yards square. A black spar-buoy (No. 1) is placed on its eastern side in three fathoms, and serves as a guide both to Hull's Cove and the anchorage on the northern side of Harbor Island. It would be better to have a spindle here, and such change will be recommended.

About a mile **NE.** by **N.** ½ **N.** from Bald Rock Ledge, and half a mile from shore, is *another detached ledge, out at three-quarters ebb,* and covering an area one hundred and fifty yards square inside the six feet line. There is no passage for large vessels between this ledge and the shore. From the northern point of entrance to Hull's Cove it bears **NE.** by **E.,** distant about five-eighths of a mile, and is quite dangerous to strangers, as it is not buoyed. This ledge has no name.

Hull's Cove. Hull's Cove is a large indentation in the eastern face of the island, about three-eighths of a mile wide, but quite shallow. There is a small settlement on its banks; but the place is of little importance except as an anchorage for small vessels. Its northern point of entrance is a wooded hill, nearly two hundred feet high, which may be approached within three hundred and fifty yards with not less than three fathoms; but there are some dangerous outlying ledges. From this point to Sands' Point the shore curves gradually around to the northward and then to the northwestward, forming a large headland or cape about a mile and three-quarters in diameter, and which will appear undulating and well wooded,—the heights varying from eighty to two hundred and twenty feet, and the shores showing occasional cleared fields, backed by dense woods. Near Sands' Point the land is cleared and not so steep; and just to the southward of the point it juts into bold, perpendicular, rocky cliffs, about sixty feet high, with a cave or ravine cut in their eastern face, and known as **The Ovens.**

Sunken Ledge. About seven-eighths of a mile **ESE.** from Sands' Point, and a quarter of a mile from shore, lies a dangerous sunken ledge with nine feet at low water and six feet at low spring tides. It bears from the sunken ledge off Hull's Cove (described above) about **NW.** by **N.,** distant nearly a mile, and is marked by a black spar-buoy (No. 3) placed to the eastward of the ledge in three fathoms water. These are all the dangers on this shore as far up as the entrance to Trenton River.

Sands' Point. Sands' Point is the northeastern extremity of Mount Desert Island. A small settlement of the same name occupies the shore back of the point, and is situated in the midst of cleared and partly-cultivated fields, sloping gradually upward towards the wooded mountains in the background. The point itself is low and nearly level, covered only with a thin growth of grass and bushes, and has several outlying flats and ledges on its northern side. It forms the southern point of entrance to **Trenton River,** (or **Mount Desert Narrows,** as it is sometimes called,) which here makes in between the northern shore of Mount Desert and the mainland, and connects Frenchman's with Blue Hill bays. (See description of Trenton River.)

HARBORS IN FRENCHMAN'S BAY.

There are but few harbors in this bay;—Winter Harbor and Stave Island Harbor, on the eastern shore, being the most important as refuges. But, besides these, West Gouldsboro', Bass Cove or East Sullivan, on the eastern shore; Flanders Bay and Skillings' River, on the northern shore; and Bar Harbor and Hull's Cove, on the western shore, are frequently used as refuges both by coasters and by the light-draught fishermen and traders during the summer season. A detailed description of the more important ones is given below.

WINTER HARBOR,

sometimes called **Mosquito Harbor**, is a large cove, running about **N.** by **E.** and **S.** by **W.**, and two miles long, with an average width of a little over half a mile. Its entrance, between Schoodic Peninsula and Turtle Island, is about a mile and three-quarters above Schoodic **Point**, and is continued between the high, rocky land of Schoodic and Mark and Ned's islands, to the southern end of Grindstone Neck, where the harbor proper begins.

Winter Harbor Light-house.

Turtle Island, Mark Island, Ned's Island and **Grindstone Neck** have been already described on page 116, in the description of the eastern shores of Frenchman's Bay. On Mark Island is the light-house, which is the guide to the harbor, and appears as a white tower, nineteen feet high, connected with a brown dwelling by a covered way. It shows a fixed white light, of the fifth order, from a height of thirty-seven feet above the sea, visible eleven miles; and its geographical position is

Latitude.....44° 21′ 40″ N.
Longitude.....68° 5′ 16″ W.

There is no fog-signal.

Between Ned's and Mark islands on the east and Turtle and Spectacle islands on the west there is an excellent channel, with from four to seventeen fathoms water, leading either into Winter Harbor by the passage between Grindstone Point and Ned's Island, or along the western face of Grindstone Neck, between it and the small islands to the westward of it, up towards East Sullivan. Not less than five fathoms is found in the shoalest part of this passage.

The western shores of Mosquito or Winter Harbor are formed entirely by Grindstone Neck, and are steep-to, free of dangers, rocky, and about one hundred and twenty feet high, with bare ledges cropping out here and there over the surface. The eastern and northern shores are cut up by coves, some of which afford good anchorage.

Fraser's Point.

On the eastern side of the harbor, a little above Grindstone Point, is Fraser's Point, the southern point of the entrance to a large but shallow cove called **Mosquito Harbor**. It is low, bare of trees, very gently sloping, and has two or three houses on it, and several wharves on the harbor side for light-draught vessels. The entrance lies between this point and a small island, about twenty feet high, bare on top, but with a few trees near the shore, called **Holmes' Island**. From six to twelve feet at low water is found at the anchorage.

Bigger's Island.

About one hundred yards to the northward of Holmes' lies Bigger's Island, also about twenty feet high, with a somewhat steep rise on its southern side. It is about four hundred yards long **NW.** and **SE.**, and its summit is partly bare and in part thinly wooded. It lies close to the main shore, and there is no passage to the eastward of it; but a very shallow passage, with three feet at mean low water, exists between this and Holmes' Island.

Bigger's Point.

Bigger's Island is connected at low water, on its northern side, with Bigger's Point, a long and narrow neck of land, twenty feet high at its highest point, but undulating, and for the most part bare of trees. A thin growth appears in the low lands, but the summits are bare. Behind the point a shallow cove extends to the northward three-eighths of a mile, where it terminates in a small stream or brook.

About three-eighths of a mile above Bigger's Point, and on the northern shore of the harbor, is the entrance to **Henry Cove**, a third of a mile long in a **N.NE.** direction, with an average width of about three hundred yards. In this cove anchorage may be found in from six feet to four fathoms, soft bottom, with no dangers. The lead will guide vessels of light draught to the anchorage, as the water shoals gradually to the head of the cove.

Winter Harbor Cove.

Winter Harbor Cove, upon the northeastern shores of which is built the settlement of **Winter Harbor**, makes in to the northwestward from the mouth of Henry Cove. It is narrow and shallow, three-eighths of a mile long, nearly two hundred yards wide at its mouth, and gradually contracts to its head. The depth is from six to sixteen feet at mean low water, and the bottom is good.

Winter Harbor Point.

The southwestern shores of this cove are formed by a long and narrow point separating it from Sand Cove to the westward, and called Winter Harbor Point, or **Sand Cove Point.** It is a long, low and very narrow neck of land, extending in a **SE.** direction between the two coves for nearly three-eighths of a mile. Seen from the southward, it appears thickly wooded with spruce and fir; but these woods extend only about half way from the southern end;—the northern half of the neck being cleared and grassy.

Sand Cove.

Sand Cove, on the western side of Winter Harbor Point, is contained between the point and the eastern shore of Grindstone Neck, and is large and commodious,—affording excellent anchorage in northerly, easterly or westerly gales. The holding-ground is good, the depth anywhere from two to six fathoms, and the anchorage roomy and accessible. The cove lies **N NW.** and **S SE.**, is nearly half a mile long, about a quarter of a mile wide, and free from all dangers.

In approaching Winter Harbor the most prominent landmarks are—first, the white light-house with the brown dwelling close to it on **Mark Island**; and next, a large, high, wooded island to the northwestward of the light, which shows remarkable perpendicular rocky cliffs streaked with white. **This is Iron-Bound Island**, in Frenchman's Bay, and is sufficiently remarkable to serve as a certain landmark either for the bay or for Winter Harbor.

DANGERS.

There are no dangers in approaching Winter Harbor, and none in entering until past the light-house and approaching Grindstone Point, when it is necessary to give the point a berth to avoid Grindstone Ledge, a dangerous ledge, dry at half-tide, lying one hundred and fifty yards S. of Grindstone Point, and extending to the southward a little more than a hundred and fifty yards. Thus its southern end is over three hundred yards to the southward of the point. An iron spindle with cage on top is placed on the highest part of the ledge, and must receive a berth to the westward.

Grindstone Ledge.

Above Grindstone Ledge there are no dangers until past Bigger's Island, when it is necessary to keep off the shore at Bigger's Point to avoid *some dangerous ledges, bare at extreme low water*, lying two hundred yards from the shore, a little above the southern extremity of the point. By giving this shore a berth of three hundred yards they will be avoided, and there will be nothing less than four fathoms. Of these ledges the most prominent is Abijah's Ledge, dry at low water, which lies about two hundred yards to the westward of the northern extremity of Bigger's Point, and is marked by a red spar-buoy (No. 2) placed in five fathoms on its western side. When past it, another red spar-buoy will be seen about four hundred yards to the northwestward, off the settlement of Winter Harbor. This is on the southern end of Guptill's Ledge, lying off the western point of entrance to Henry Cove, and bare at low spring tides. The buoy, which is marked No. 4, is placed in seven feet on the southern end of the ledge, and is used as a guide only by vessels bound into the cove (or **Little Harbor**) on the southwestern side of the settlement. Vessels bound into Henry Cove pass to the eastward of it.

Abijah's Ledge.

Guptill's Ledge.

SAILING DIRECTIONS.

Bring Winter Harbor Light-house to bear **N.** and steer for it, carrying not less than twenty-three fathoms water until within three-quarters of a mile of the light, in twenty-three fathoms, soft bottom, and the southern point of Turtle Island bears **NW. ½ W.**, a little over half a mile distant. Now, *if bound into Henry Cove*, steer **N.** by **E. ½ E.**, which will lead safely up to the entrance with not less than seven fathoms, and to the anchorage with not less than four fathoms. If of light draught, anchorage may be found in from six to sixteen feet near the head of the cove.

Bound into Winter Harbor Cove.—On the **N.** by **E. ½ E.** course, when nearly abreast of Winter Harbor Point, with the middle of the entrance bearing **NW. ½ N.**, steer that course up the middle of the cove to the anchorage, in from six to sixteen feet water, soft bottom.

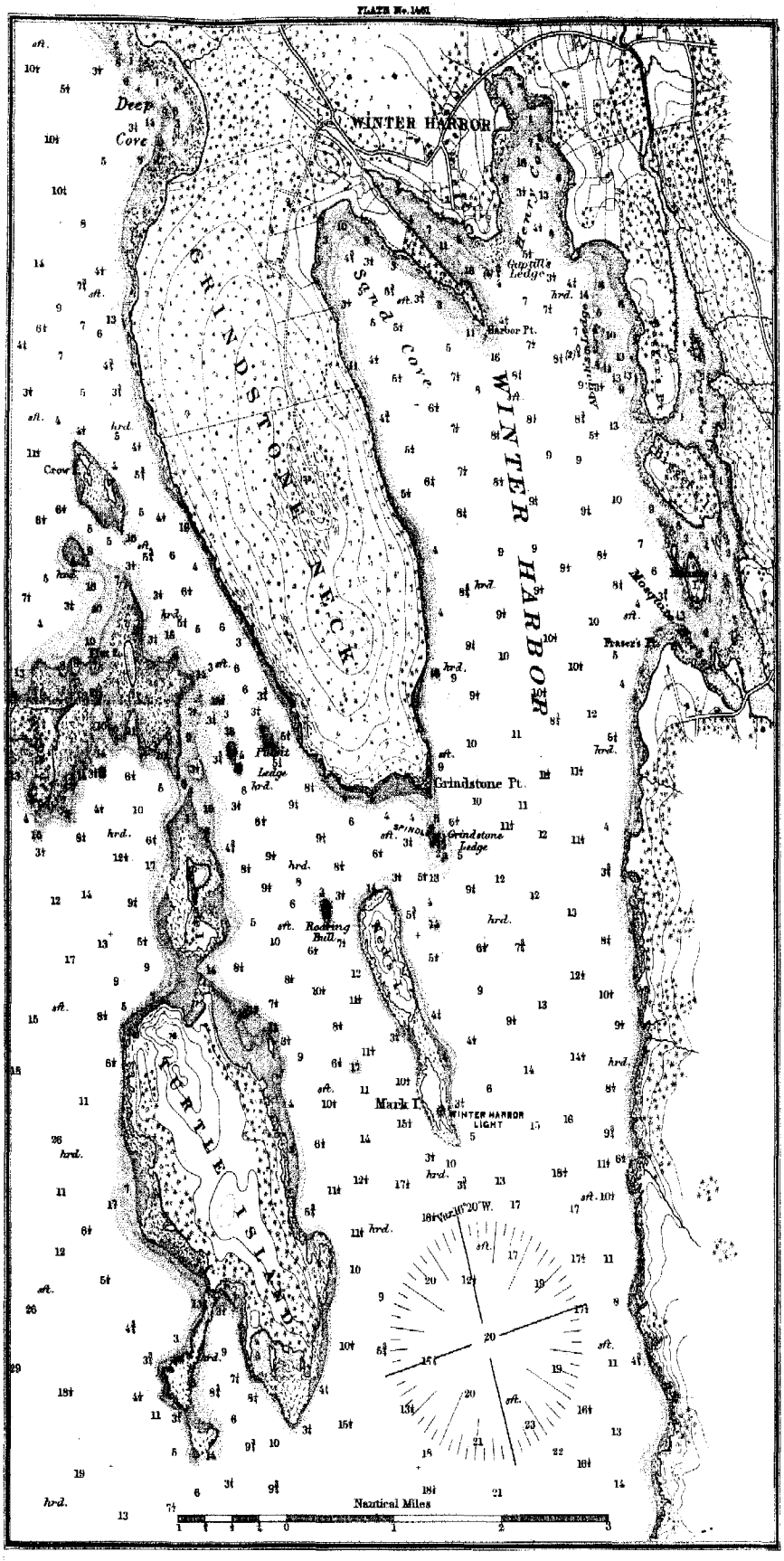
Bound into Sand Cove.—When, on the **N.** by **E. ½ E.** course, the southern extremity of Grindstone Point bears **W.** by **S.** and you have ten fathoms water, steer **N.** by **W.**, which will lead up the middle of the harbor safely, with not less than five fathoms, to the anchorage.

Bound into Mosquito Harbor.—Keep the eastern or Schoodic shore aboard until up with Fraser's Point, which must receive a berth of one hundred and fifty yards. Round it to the eastward and steer **E.** by **S. ½ S.**, passing about midway between the point and Holmes' Island. Anchor in from six to thirteen feet, according to draught. *Or*, on the **N.** by **E. ½ E.** course up the harbor, when Grindstone Point bears **W.** by **S.**, (as before,) steer **E.** by **N. ¾ N.** about for the middle of Holmes' Island. On this course there is not less than six fathoms. Continue it until within two hundred yards of the island, when steer **E.** by **S. ½ S.**, gradually hauling to the southward so as to keep in the middle of the passage. The harbor is only fit for vessels of light draught.

General Remarks.—Do not fear to stand close to the eastern or Schoodic shore, as it is very steep-to;—from five to eight, and, in some places, ten fathoms being found a hundred yards from the shore.

In beating in, the only directions necessary are not to go within less than one hundred yards of the eastern shore until up with Fraser's Point; after passing this point, to give Bigger's Island a berth of two hundred yards to the eastward; and, if bound into Henry Cove, or Winter Harbor Cove, to give Bigger's Point a berth to the eastward of not less than three hundred yards.

Mark Island may be approached from the eastward to within one hundred and seventy-five yards, and Ned's Island to within seventy-five yards, with not less than five fathoms. But in standing to the westward, past Grindstone Point, give it a berth to the northward of not less than a quarter of a mile to avoid Grindstone Ledge; and when up with the ledge do not stand farther to the westward than to bring Winter Harbor Light-house to bear **S.** by **W. ¾ W.**, when there will be five fathoms, hard bottom. You may safely stand to within one hundred yards of the eastern shore of Grindstone Neck with not less than four fathoms water.


PLATE No. 1461
WINTER HARBOR
Deep Cove
Sand Cove
WINTER HARBOR
GRINDSTONE NECK
Grindstone Pt.
Grindstone Ledge
Mark I.
WINTER HARBOR LIGHT
Nautical Miles

LIGHT-HOUSE.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Winter Harbor Light-house	44 21 40	68 5 16	4 32 21.1	Fixed.	37	11

TIDES.

Corrected Establishment	10h 52m
Mean Rise and Fall of tides	10.5 ft.
Mean Rise and Fall of Spring tides	11.7 ft.
Mean Rise and Fall of Neap tides	9.3 ft.
Mean duration of Rise	6h 12m
Mean duration of Fall	6h 13m

VARIATION OF THE COMPASS.

The magnetic variation for 1879 is 16° 15′ W., with an approximate annual increase of 3′.

STAVE ISLAND HARBOR.

This is an excellent harbor for strangers of whatever draught;—being commodious, deep and easily accessible. There are no dangers whatever;—all that is necessary, when bound in, being to enter midway between Jordan's and Stave islands and choose a suitable berth. The holding-ground is good. After lying at anchor here for twenty-four hours it was found quite difficult to get the anchor.

In going in from the southward and westward, the low islet called **Yellow Island**, with a clump of firs on it, (before referred to as lying close in with the western shore of Jordan's Island,) must be left to the eastward and southward.

Vessels of light draught may cross the bar between Jordan's Island and the mainland with five feet at mean low water, and thus enter Stave Island Harbor from the southward; but this passage is not recommended to strangers. The proper course is to pass to the eastward of Iron-Bound Island, between it and Long Porcupine, and as soon as the passage between Jordan's and Stave islands is open steer for it. There is not less than ten fathoms in the passage between Long Porcupine and Iron-Bound islands, and both shores are steep-to. *Or*, pass to the eastward of Iron-Bound Island, between it and Grindstone Neck, and go through Halibut Hole, between Jordan's Island and the northern end of Iron-Bound Island, carrying not less than eleven fathoms water. In this passage the only dangers are the *Cod Ledges*, with nineteen feet at mean low water, which lie a quarter of a mile from the eastern shore of Iron-Bound Island and a little above Deep Cove, and extend in a N. by W. direction for one-third of a mile.

BAR HARBOR

lies on the western side of the bay, about three miles above Schooner Head, and, as before remarked, on page 121, is the site of the principal settlement on Mount Desert Island. The harbor is formed by the eastern shore of Mount Desert on the west and south, and by Harbor and Sheep Porcupine islands on the north and northeast; and affords comfortable anchorage in from two to five fathoms at low water. It is not, however, a good harbor in southerly or easterly winds,—being open on that side, without any shelter. In such cases vessels pass to the northward of Harbor Island and anchor in the bight on the northern side of the village.

Sheep Porcupine Island.

Sheep Porcupine Island has been already described on page 121 as a nearly round island, about a quarter of a mile in diameter, and appears high, bluff and rocky, dotted with small fir and spruce. It is also sometimes called **Little Porcupine Island.**

Harbor Island.

Harbor Island, or **Bar Harbor Island**, has also been described on page 121, and lies about a quarter of a mile to the westward of Sheep Porcupine,—the channel between them having not less than thirteen feet. It is rocky, about two hundred feet high, and covered with a dense growth of bushy trees. A bar, dry at low water, connects its southwestern end with Mount Desert, abreast of the middle of the village, and affords perfect shelter in westerly and northwesterly winds.

There are no dangers in the approaches to Bar Harbor, nor in the harbor itself; and all that is necessary in order to safely enter it is to keep off the shores of the islands.

SAILING DIRECTIONS.

I. ***Coming from the Eastward.***—Bring Round Porcupine Island to bear from NW. to W NW. and steer for it, passing to the eastward; and when to the northward of it Bar Harbor will be open, about a mile off, and bearing NW., with Harbor Island (thickly wooded with bushy trees) showing on the northern side of the entrance. Steer boldly into the harbor, aiming to pass about midway

Sailing Directions--Bar Harbor. between the island and the Mount Desert shore. Use the lead regularly, and anchor in from ten to eighteen feet off the steamboat wharf, or in from four to seven fathoms with the wharf bearing **W.** The holding-ground is good, and the shelter excellent in northerly and westerly gales.

II. ***Coming from the Southward.***—Keep the Mount Desert shore aboard until up with Schooner Head, when Round Porcupine will be seen ahead as a high, precipitous, rocky island with a peculiar white patch on its southern face. Bound in by the usual channel pass to the eastward of this, and when past it steer for the middle of the harbor, following the directions given for coming from the eastward.

III. ***To pass to the Westward of Round Porcupine, and enter Bar Harbor.***—When past Schooner Head still keep the Mount Desert shore aboard, steering for Sheep Porcupine Island, which is easily recognized as the first island to the northward of Round Porcupine, and appears as a bluff, rocky head dotted with small fir and spruce. Pass to the westward of Porcupine Dry Ledge, giving it a berth of about one hundred yards, and steer **N NW.** into the harbor, anchoring with the steamboat wharf bearing **W.**

The course from East Sullivan Entrance to Bar Harbor is **SW. ⅛ W.**, and from Bean's Island (in the mouth of Flanders Bay) it is **S. ½ W.**

HULL'S COVE.

About two miles and a half to the northwestward of Bar Harbor lies Hull's Cove, frequently used as an anchorage. It is a small and unimportant harbor, with three fathoms at mean low water, and good holding-ground. It is a little over a mile and a half below the entrance to Trenton River.

SAILING DIRECTIONS.

There are no dangers in the approaches to Hull's Cove. To enter it from the southward, bring Long Porcupine Island to bear **NE.** by **N.** and steer for it, passing to the westward, between it and Sheep Porcupine. When past the latter island, haul to the westward about **NW.** by **W.** for Hull's Cove, and anchor about a quarter of a mile from shore. The least water found in following the above directions is three fathoms, and there are no dangers except *a dry rock*, which you leave to the northeastward.

There is deep water (from eight to twenty fathoms) in the wider parts of Frenchman's Bay, both above and below the Porcupine Islands,—affording an excellent beating channel. The bay has not, as yet, been fully surveyed, and a careful hydrographic examination will probably develop new and important features in its character as an anchorage and harbor of refuge.

WEST GOULDSBORO' HARBOR,

which has already been described on page 118, cannot be entered without a pilot, and no intelligible sailing directions can be given until the place has been thoroughly surveyed. A pilot can always be obtained either at Winter Harbor, Bar Harbor or Stave Island Harbor.

BASS COVE.

or **East Sullivan Harbor,** lies next to the westward of West Gouldsboro'; and, as already described on page 119, is contained between the township of East Sullivan on the east and Waukeag Neck on the west. The harbor is irregular in shape and nearly two miles and a half long,—with the village of **East Sullivan** occupying its eastern shore, on the low, flat plains extending from the foot of Schoodic Mountains to the bay. The principal trade in East Sullivan is in lumber.

Ash Point. Ash Point, the eastern point of entrance, is the southern end of **Ash Neck,** and is a high, bluff head with sandy faces, and a thick growth of birch and spruce on its northern end. A few houses appear on the summit.

Eastern Point. Eastern Point, the southeastern extremity of **Waukeag Neck,** is the western point of entrance to this harbor, and is gently sloping, grassy and cleared, except on its eastern face, where there are a few trees. This part of the shore is well settled.

There are many islands in the approaches to Bass Cove, the principal of which are Simpson's or Preble's, Calf, Junk of Pork, Sheldrake and Ash islands. Most of them lie in the way of those using the western passage between Calf and Preble's islands.

Simpson's Island. Simpson's Island, or **Preble's Island,** as it is locally known, is the first met with after passing Calf Island, and is always left to the westward, unless bound into Eastern Point Harbor. It is rocky, heavily wooded and low, except at its eastern end, which is a high, wooded bluff, called **Simpson's Head.** Next to the northward and eastward is Sheldrake Island, three hundred yards long, about twenty feet high, flat and grassy, with

Sheldrake Island. sandy faces, and dotted here and there with scrub and low fir. The course passes to the eastward of this island also, bearing to the northward, and passing well to the southward and eastward of the large

ledges which extend from the island in a southerly direction. These ledges are bare at low water, and in many cases at half-tide, and extend nearly three-quarters of a mile **SE.** by **S.** from Sheldrake Island,—terminating in a group of bare rocks lying in a line over an area of about three hundred yards, and joined into one rock at half-tide. These rocks are known as **Long Ledge.**

Three-eighths of a mile to the northward of Long Ledge, and about three hundred yards to the southwestward of Sheldrake Island, is a small islet of peculiar appearance, called Junk of Pork. It is a bluff, sandy head, with precipitous faces, and its summit crowned with a few trees; and seen from the southward and westward it appears as part of the mainland and is a conspicuous mark. Passing it, the next islet is Ash Island, which lies two hundred and fifty yards to the eastward of Sheldrake Island, with which it is connected at low water. It is on the western side of the channel, and is a small, low, rocky island, about three hundred yards long and quite narrow, dotted with spruce and fir, and is sometimes passed close-to; but this passage is not safe for strangers, for there lie to the southward the high, bare rocks above mentioned, and called Long Ledge; and from these shoal water and sunken ledges extend to the southward,—the principal dangers being **Half-Tide Rock** and **Lobster Rocks,** (the latter not buoyed.) There is a channel, with twenty-one feet at high water, between Half-Tide Rock and Long Ledge, but it is not safe for strangers.

Junk of Pork.

Ash Island.

The shores of both **Waukeag Neck** and **East Sullivan** are cleared and grassy, have a gentle slope, and are well settled.

DANGERS

IN APPROACHING AND ENTERING BASS COVE BY THE MAIN CHANNEL, BETWEEN STAVE AND CALF ISLANDS.

The principal dangers in this passage lie in the very entrance, where there is *a ten-feet bar*, and two spar-buoys will be seen ahead, close together. The nearest one is a black spar, on Southeast Point, a long ledge making in a southerly direction from the southeastern point of Calf Island for about two hundred and fifty yards, and for the most part dry at low water. The buoy, which is marked No. 1, is in ten feet at mean low water, about one hundred yards to the southeastward of the dry rocks, and is to be left to the northward and westward.

Southeast Point.

The other buoy is a red spar, on Stave Island Middle Ground,—a bad shoal off the northern end of Stave Island, with only a few feet on it at low tide. The buoy is marked No. 2, placed in nine feet at lowest tides, on the northern end of the shoal, and the channel passes to the northward, between it and the black buoy on Southeast Point, and is very narrow, with only ten feet at lowest tides. When past these buoys, the next danger is Half-Tide Rock or Ledge, a very dangerous ledge, out at half ebb, lying nearly **SE.** by **S.** from Long Ledge, about three-eighths of a mile off; and about **NE. ¼ E.** from the southeastern point of Calf Island, nearly five-eighths of a mile distant. It is marked by a black spar-buoy (No. 3) placed in eighteen feet water on its southeastern point. At low water there is a ten-feet channel to the northwestward of this rock, between it and Long Ledge, and at high water vessels drawing eighteen feet may safely pass; but this passage ought not to be attempted without a pilot.

Stave Island Middle Ground.

Half-Tide Rock or Ledge.

The usual course is to pass to the eastward of Half-Tide Rock; but, if passing to the westward, beware of Lobster Rocks, making off from Long Ledge to the southeastward, and having about two feet at mean low water. They are not marked in any way except at low water, when they show themselves. At high water about twelve feet may be taken over them; but there is no passage between them and Long Ledge, although there is one often used between the latter and Ash Island, which is, however, unsafe for strangers.

Lobster Rocks.

When past Long Ledge there are no more dangers until you come up with Ash Island, off the southern end of which is *a ledge, bare at low water*, and connecting the island with *a dry rock* an eighth of a mile from it. This rock is always out, and is not, therefore, dangerous; but there is *a sunken ledge*, with about two feet at mean low water, lying to the southeastward of it, at a distance of three hundred and fifty yards. This ledge is marked by a black spar-buoy (No. 5) placed in three fathoms, and the course passes to the eastward of it. The ledge is not named.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BASS COVE BY THE MAIN CHANNEL, BETWEEN STAVE AND CALF ISLANDS.

Coming from the southeastward or southwestward, bring Schooner Head, on the eastern side of Mount Desert, to bear **S SW.** and steer **N NE.**, which will lead safely to the entrance. Pass midway between the red buoy on Stave Island Middle Ground and the black buoy on Southeast Point, and bring the white house near the church in East Sullivan behind the northern extremity of Ash Point. Run in on that range, which will clear the Lobster Rocks, and when abreast of Ash Island steer **N.** by **W.** for the anchorage.

Sailing Directions--Bass Cove. The above courses pass between Iron-Bound Island and Long Porcupine; midway between the buoys on the Middle Ground and Southeast Point; and about a hundred yards to the eastward of Half-Tide Rock. The least water is found between the Middle Ground and Southeast Point, where there is ten feet at lowest tides.

The course from Bar Harbor to the entrance to East Sullivan is **NE. ⅛ E.**, and the distance about four miles.

The northern channel into East Sullivan leads between Preble's and Calf islands, and is entirely unfit for strangers, though carrying better water than that to the southward. In going in, Preble's Island should receive a berth of two hundred yards to the westward to avoid *a ledge lying about one hundred and fifty yards from the southeastern point of the island;* and the course is then **NE.** by **E. ½ E.**, leaving Sheldrake and Junk of Pork islands to the northwestward, until up with Long Ledge. This entrance is frequently used by coasters and fishermen, who are familiar with the dangers.

There is still another passage into East Sullivan by crossing Stave Island Bar from Stave Island Harbor; but as the bar is dry at low water, the channel cannot be used except with the assistance of a local pilot, and then only by small vessels.

EASTERN POINT HARBOR

is not safe for strangers to attempt, although it has good water even at low tides. The services of a pilot are, however, necessary to insure safety.

FLANDERS BAY,

or **Sullivan Harbor**, as it is sometimes called, has been already described, on page 119, as a large arm of Frenchman's Bay making to the northward from the northern shore, and the next indentation to the westward of Bass Cove. Its entrance is between Waukeag Neck on the east and Crabtree Neck on the west,—between the two being about a mile and a half wide. This entrance is, however, obstructed by an island called Bean's Island, which has a somewhat peculiar appearance. It is long and low, and seen from a distance looks like a white sandy islet; but is in reality rocky, with a grassy surface. At the eastern end it makes out into a sort of head, fringed with trees, with scattered trees here and there on its summit; but the rest of the island runs low and bare, and is but little above high-water mark. The peculiar white appearance of this island makes it an excellent mark for the entrance to Sullivan, as there is nothing like it in the bay.

Bean's Island.

About midway between Bean's Island and Waukeag Neck lies a dry ledge, called **Bean's Island Ledge**, a detached rock, always out, which may be passed on either side with not less than three fathoms; but it is best not to approach it nearer than one hundred yards.

The eastern point of entrance to this bay is called Bean's Point, and is the southwestern extremity of **Waukeag Neck**. It is low and for the most part cleared; but has occasional clumps of trees, and one or two houses near its western end.

Bean's Point.

The western point of entrance is Crabtree Point, the southern extremity of **Crabtree Neck**, and is thickly wooded and of moderate height. Both shores of the bay are of moderate height and rise gently back to wooded summits. In many places they are cleared and cultivated, in others rocky and barren. The village of **Sullivan** on the eastern shore, and **Hancock** on the western, are both plainly visible from the entrance.

Crabtree Point.

About a mile above Crabtree Point, on the western shore, will be seen a rocky head of moderate height, fringed with a thin growth of birch, and forming the extremity of a long, rocky point. This is Grant's Point. There is a cove on each side of it capable of affording shelter. That to the westward of the head is called **Jellison's Cove**, and that to the eastward, **Grant's Cove**;—the latter affording good anchorage in from two to three fathoms. This part of the channel is somewhat obstructed.

Grant's Point.

The harbor of Sullivan is formed by a long cove making to the eastward from the bay, about two miles and a half above Bean's Point, and affords good anchorage in from two to three fathoms; but the channel is narrow. Vessels, however, often anchor in the bay, where it is wider and has more water.

On the western shore, opposite to the town and a little above the entrance to the inner harbor, is Martin's Point, low and sandy, with water-worn faces, and a single spruce tree on its end. It is the southwestern point of entrance to a narrow passage leading to **Franklin Bay**, and called **The Falls**. The stream of ebb runs over the rocks in this passage with tremendous velocity, forming a dangerous rapid, and barring navigation, even for vessels of light draught, except at high water. To shoot The Falls vessels run up into the mouth of the passage, then luff into the wind and allow the current to carry them over.

Martin's Point.

The northeastern point of entrance to The Falls, called Eastern Head, sometimes **Hodgkins' Point**, is a high, bluff, sandy head, with precipitous faces, and has a large boulder at its base. Near the top the cliff is fringed with a thin growth of trees. The surface slopes back inland from the head with a gentle descent and has a smooth, grassy surface.

Eastern Head.

Above Sullivan it is not safe for strangers to go. The distance from Bar Harbor to Bean's Island is about five and a half miles.

DANGERS

IN APPROACHING AND ENTERING FLANDERS BAY.

Crabtree Point Ledge.

The first danger met with in entering this bay lies off Crabtree Point, is called Crabtree Point Ledge, has six feet at low water, and lies to the eastward of the point, about a third of the way over towards Bean's Island. A black spar-buoy marks this ledge, and is placed to the eastward of its eastern end. In passing, leave it to the westward.

Half-Tide Ledge.

When up with Grant's Point, a black spindle surmounted by a cage will be seen ahead, a little to the eastward, and about half a mile off. This is on Half-Tide Ledge, a dangerous rock on the western side of the channel, a little below the town, and bare at half ebb. The spindle is on the rock, and is to be left to the westward. It is just above **Ingalls' Island.**

Low-Water Rock.

Nearly opposite to Half-Tide Ledge, on the eastern side of the channel, is a ledge, dry at high water, called **Grant's Ledge**; and off its western end is Low-Water Rock, a small ledge, bare at low water, and sometimes marked by a red spindle surmounted by a cage. This and the spindle on Half-Tide Ledge lie nearly opposite each other, defining the limits of the channel.

Bennett's Ledges.

Bennett's Ledges, lying a quarter of a mile above Grant's Ledge, are always out. They lie close in with the western shore and are surrounded by shoal water, but are not dangerous except to vessels beating to windward.

Martin's Ledges.

Martin's Ledges extend in a **SSE.** direction from Martin's Point and are sometimes called **Eaton's Ledges.** They are bare at high water, and have shoal water and sunken ledges between and among them. A sunken ledge with three feet at low water lies near the eastern end of these ledges, and is marked by a black spar-buoy placed in three fathoms, and marked No. 1.

The Falls are being deepened by the United States Engineers by blowing out the most dangerous rocks; and it is contemplated by this means not only to deepen the channel, but to diminish the force of the current so as to render the passage perfectly safe.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING FLANDERS BAY.

Keep the western shore of Frenchman's Bay aboard until up with Round Porcupine, when pass to the eastward of this island, and between Burnt Porcupine and Sheep Porcupine. When in this passage, the course for the entrance to the bay is **N.** ½ **E.** for Bean's Island, and thence to the anchorage **NE.** by **N.** ¾ **N.** Not less than three fathoms may be taken on the above courses, which pass to the eastward of Crabtree Ledge; to the westward of Half-Tide Rock; to the eastward of Low-Water Rock; well to the eastward of Bennett's Ledges; and to the eastward of Martin's Ledges.

Coming from East Sullivan, to enter this harbor.—When clear of Long Ledge, steer **NW.** by **W.** ½ **W.**, which will lead up to the entrance to Eastern Point Harbor, passing to the southward and eastward of Junk of Pork, Ash Island, Sheldrake Island and Preble's Island, and to the northwestward of Calf Island. When abreast of the northern head of Calf Island, round it to the westward and pass between it and the eastern point of Preble's Island, giving the latter a berth of two hundred yards to avoid the ledges. When fairly through this passage, steer **W.**, past Preble's and Ram or Drum islands; and when up with the latter, steer **NW.** by **N.**, past Bean's Island. Keep the Ram Island shore aboard to avoid Sunken Ledge, (see page 119,) and leave Bean's Island dry ledge either to the eastward or westward about one hundred and fifty yards; and when abreast of the island steer **NE.** by **N.** ¾ **N.** to the anchorage.

This passage is only fit for small vessels, and must not be attempted by strangers without a pilot.

SKILLINGS' RIVER

lies next to the westward of Flanders Bay, on the northern shore of Frenchman's Bay,—its entrance lying between Crabtree Point on the east and Meadow Point on the west. (See also page 120.) Between these two points it is about a mile and three-quarters wide, but this width rapidly diminishes until, about two miles above its mouth, it is only three hundred and fifty yards wide. It then again widens into a sort of bay of irregular shape about a mile and a quarter wide in its widest part, but soon diminishing to three-eighths of a mile, where the Upper Narrows commence; and finally terminates in Kilkenny Cove, about five miles and a half above its mouth. The river is shallow, of little importance, and cannot be entered without a local pilot, as its dangers are not buoyed. There is no settlement of any importance on its banks, and no trade except a small local trade carried on by the few inhabitants.

Crabtree Point. Crabtree Point, the eastern point of entrance, is also the southern extremity of **Crabtree Neck**, and is thickly wooded and of moderate height, with a somewhat gentle rise to the northward. It is pretty bold-to, and may be safely approached with not less than three fathoms within two hundred yards.

Meadow Point. Meadow Point, the western point of entrance, is also the southeastern extremity of **Trenton Peninsula**, (on which is situated the township of **Trenton**,) and is quite low and flat, for the most part bare, but dotted with clumps of trees and backed by thick woods. Ledges bare at low water extend from it to the eastward and to the southward for three hundred and fifty yards; and it is not well to approach it closely. This point forms also the southern point of entrance to a large cove, called Raccoon Cove, making into the western shores of the river, and for the most part dry at low water.

Raccoon Cove. Raccoon Cove is of irregular shape, lies **W NW.** and **E SE.**, and is nearly a mile and a half long. In its mouth, and nearly in the middle, (though at low water it is joined to Meadow Point by bare ledges,) lies a small island called **Shooting Ledge**, composed of bare rock. The northern point of the cove is called **Old Point**, and is low, very gently sloping, cleared and cultivated, and shows steep faces about twenty feet high on its southern side. Between this point and Shooting Ledge the entrance to the cove is about four hundred and fifty yards wide. Only small vessels resort hither for anchorage.

Peck's Point. The eastern bank of Skillings' River above Crabtree Point runs about **NW.** by **N.** ½ **N.** for about two miles to Peck's Point, at the lower end of the Lower Narrows. The shore is of moderate height, rising some eighty feet with a somewhat steep incline, and for the most part wooded, although cleared fields and houses appear here and there. A mile and a half above Crabtree Point is a small cove, called **Young's Eddy**, with a somewhat steep, rocky shore, fringed with a few trees and backed by cleared fields. Peck's Point is half a mile above it, and is a long, low, flat, rocky point, backed by trees,—the land rising with a very gentle slope. Here the river is only about three hundred and fifty yards wide.

The western bank of the river from Old Point to the lower end of the Narrows, opposite Peck's Point, has a general course about **N NE.**, and is of moderate height, with gently sloping surface, for the most part cleared, but dotted here and there with clumps of trees.

Lower Narrows. The Lower Narrows extend for about a mile in a **N.** ¼ **W.** direction from Peck's Point to Young's Point, and vary in width from three hundred and fifty to about eight hundred yards,—both banks being much indented, and bare ledges making off from both shores, but especially the western shore. The eastern bank is from twenty to forty feet high, with a very gentle slope, and for the most part cleared, with occasional clumps of trees between the cleared fields, except for about a quarter of a mile above Peck's Point, where it is thickly wooded. About three-eighths of a mile above Peck's Point, and about one hundred and fifty yards from high-water mark, is **Watson's Ledge**, a bare rock, connected at low water with the shore. About a quarter of a mile above this, and five-eighths of a mile above Peck's Point, is **Nigh Ledge**, bare at half-tide, and at low water joined to the shore by flats.

Young's Island. A quarter of a mile above Nigh Ledge, and just below Young's Point, is Young's Island, a low, wooded island, of an oval shape, about one hundred and fifty yards long, and surrounded by ledges. It is about fifty yards from shore and a hundred yards to the southward of Young's Point; but there is no passage inshore of it,—the most of the area being occupied by ledges.

Young's Point. Young's Point, at the northern end of the Narrows, is long, low and very gently sloping, with a few trees and houses upon it, and a wharf making out on its northern side. It is also the southern point of entrance to the large bay making in on the eastern side of the river, and which is sometimes known as **Young's**, sometimes as **Hyde's**, and sometimes as **Pettingill's Bay**.

Mosely's Point. The western shore of the Narrows is also much cut up by coves, and has many outlying ledges. Mosely's Point, which is nearly opposite to Watson's Ledge, is a broad, flat point, quite low and entirely cleared, except where a thin fringe of trees exists in some places along the edge of the point. Dangerous ledges, for the most part bare at low water, make off from it to the eastward one hundred yards, to the northeastward nearly three hundred yards, and to the northward three hundred and fifty yards,—rendering an approach to this part of the western shore of the Narrows very dangerous. A large but shallow cove makes in on the southern side of the point, (with a bare ledge almost exactly in the middle of its entrance,) and known as **Mosely's Cove**; and there is another on its northern side, which is, however, at low water entirely occupied by ledges.

Hodgkins' Point. Above Mosely's Point the western shore of the Narrows is composed of partly wooded and partly cleared lands, varying in height from fifteen to forty feet, and showing occasional steep faces. The northern point of this western shore of the Narrows, which is about half a mile above Mosely's, is called Hodgkins' Point, and is about forty feet high, with wooded slopes and cleared summit. A ledge, bare at low water, called **Ford's Ledge**, and covering an area about one hundred yards square, lies about three hundred yards to the eastward of this point, and between five and six hundred yards to the westward of Young's Point,—thus being nearly in the middle of the passage. Hodgkins' Point is, however, comparatively bold-to,—the low-water line running within twenty yards of it.

Young's Bay. Young's Bay has a mean diameter of about half a mile, but is very shallow. Its shores are much cut up by coves, and it terminates to the northward in Hill's Cove, to the northeastward in Old Pond, and to the southeastward in Smith's and Pettingill's creeks. All of its shores are low, very gently sloping, and about equally

divided between wooded and cleared lands. **Hyde's Point**, its northern point of entrance, is low and nearly level, with somewhat steep faces and a few trees upon it. It is about half a mile to the northward of Young's Point, which is here the width of the entrance; but as the flats make off for over four hundred yards from the point, the channel is very much contracted, and is, in fact, what there is of it, on the southern side of the bay. A small rocky islet, with one or two trees upon it, lies off this point, about one hundred and fifty yards to the northeastward; and two bare rocks lie close together, nearly four hundred yards to the eastward of the point,—these latter being known as the Sheldrake Islands, and connected with Hyde's Point at extreme low water. These islands lie also on the western side of the channel leading into Hill's Cove. About four hundred yards to the northward of them is the southern end of **Hill's Island**, which lies in the middle of the entrance to the cove of that name. It is a low, wooded islet, of a somewhat oval shape, a little over three hundred yards long **N.** and **S.**, and about two hundred wide at its widest part, and showing steep faces to the southward and westward. At low water this island is joined to the shore, at the eastern point of entrance to Hill's Cove, by ledges and mud flats; and there is no passage on its eastern side,—the area being filled with ledges.

Sheldrake Islands.

Hill's Cove is bare at low water. It runs about **NW.** and **SE.**, is about a quarter of a mile in diameter, and terminates in a small stream, called **Potter's Creek**. Its western shore is thickly wooded, its eastern bank for the most part cleared and showing steep faces, and both are low and gently sloping, although the western shore is the highest and steepest.

Hill's Cove.

Old Pond, at the northeastern end of the bay, although about five-eighths of a mile long and from two hundred to four hundred yards wide, is almost entirely filled up with mud flats and grass; and all entrance to it is shut off at low water by the ledges and flats off Hill's Island. On the southern side of the entrance is a very gently sloping wooded point about twenty feet high; and on the southern side of this makes in a small cove about four hundred yards long **E.** and **W.**, but entirely bare at low water. It is commonly known as **Foss' Cove. Foss' Point**, on the southern side of the entrance to this cove, is low, level and cleared, with several houses and a wharf upon it. A quarter of a mile to the southeastward of it is the common entrance to **Pettingill's** and **Smith's** creeks, at the southeastern end of Young's Bay,—both of which are nearly dry at low water.

Old Pond.

The southern shore of Young's Bay, from Young's Point to the mouth of Smith's Creek, is composed of very gently sloping land, for the most part cleared, but showing occasional clumps of trees. There are a number of houses on this shore close to the beach, and one or two wharves extending out beyond the low-water line.

The western bank of the river, from Hodgkins' Point to Seal Point, about a mile above, has a general direction about **NW.** by **N.**, and is for the most part low and wooded, with steep faces, and occasional cleared fields dotted with houses. A small, bare rock, connected at low water with the shore by ledges, lies about two hundred yards from this western bank, and a quarter of a mile above Hodgkins' Point. It is called Mussel Shoal, and, at low water, the flats extend out two hundred yards to the northeastward of it. Both shores of the river are shoal above the Lower Narrows; and it is impossible for strangers to navigate with safety above Young's Point.

Mussel Shoal.

Seal Point is a flat, rocky and wooded point, surrounded by ledges, and is the southern point of entrance to a large cove of irregular shape, extending to the southward for about a mile, called **Partridge's Cove**, and bare at low water. Another long cove, narrow and of very irregular shape, extends to the westward from the western side of Partridge's Cove for about seven hundred yards, where it is nearly closed by a long dike on which there is a saw-mill. It is called Salisbury's Cove, and is almost entirely bare at low water, only an extremely narrow slue leading up to the saw-mill. Above the mill the cove terminates in two crooked and shallow creeks, known as **Mud Creek** and **Urine Creek**, both of which are entirely bare at low water.

Salisbury's Cove.

The eastern bank of Skillings' River, from Hyde's Point, runs about **NW.** by **W.** for seven-eighths of a mile to abreast of Seal Point, on the western shore. It is all low and thickly wooded, with outlying ledges and mud flats; and, at low water, the bare flats extend to distances of from one hundred and fifty to four hundred and fifty yards from shore. On the northern side of the point, opposite Seal Cove, makes in a small cove, bare at low water, and of no importance; and thence this eastern shore has a general direction about **N.** by **W.**, for nearly five-eighths of a mile, to the entrance to the Upper Narrows, leading into Kilkenny Cove, at the head of the river.

The western point of entrance to Partridge's Cove, on the western bank, is called Rover's Point, and is low, flat and thickly wooded. On its northern side makes in a shallow cove, about half a mile long, called **Western Weir Cove**; and just to the northward of this another, equally shallow, and known as **Eastern Weir Cove**. The northern shore of this latter cove is formed by a long, low, wooded point of very irregular shape, known as **Joy's Point**; and from the southeastern extremity of this point the western shore of the river has a direction about **N.** by **E.** to the Upper Narrows,—the distance being about eight hundred yards.

Rover's Point.

Many dangerous ledges and shoals obstruct that portion of the river between Seal Point and the Upper Narrows, rendering navigation impossible, even for the smallest vessels, except at high water and with an experienced pilot. Of these ledges the first met with is called Seal Ledge, is bare at half ebb, and lies nearly in mid river,—bearing from Seal Point about N. by E. ½ E., distant nearly three hundred yards; and from the opposite shore about four hundred yards distant. The channel passes to the northeastward of it. Nearly four hundred yards to the northward of it lies Great Ledge, also bare at half-tide, and surrounded by dangerous mussel beds, which, at low water, extend from one hundred and fifty to two hundred and fifty yards from the dry

ledge. Great Ledge is three hundred yards long N. and S., and lies almost exactly in the middle of the river. Its northern end is about eight hundred and fifty yards below the Narrows.

Upper Narrows. In the Upper Narrows the river is about three hundred and fifty yards wide from bank to bank; but this width is diminished, at low water, to about one hundred yards, by the bare ledges making off from both shores. Here the river spreads away into two large and shallow coves of irregular shape,—that to the eastward being known as **Googins' Cove**, and that to the westward as **Kilkenny Cove.** The former is almost entirely bare at low water, and has shores of moderate height, alternately cleared and wooded; while Kilkenny Cove has a narrow slue in it, terminating in a brook, known as **Kilkenny Stream**, about a mile above its mouth. Here there is a small settlement, situated amid gently sloping, cleared and cultivated fields.

Stewart's Island. Directly in the middle of the entrance to Kilkenny Cove is a small, low, wooded island of an oval shape and about one hundred yards long, called Stewart's Island. It is surrounded by ledges, and lies a little over two hundred yards from either shore.

The banks of Kilkenny Cove are all low and very gently sloping, in some places wooded, but for the most part cleared and dotted with houses.

In the absence of any survey of this river, and in view of its numerous dangers, (none of which are marked in any way,) no sailing directions which would be intelligible to a stranger can be given. The only safe rule is to take a pilot. There is good anchorage for small vessels in the mouth of Raccoon Cove; but even this is so contracted by Shooting Ledge and other dangers as to be unsafe for strangers to attempt.

TRENTON RIVER,

making in on the southern side of Meadow Point, between it and Mount Desert Island, is really not a river, but a strait connecting Frenchman's and Blue Hill bays and separating Mount Desert from the mainland. It is sometimes, though erroneously, called **Mount Desert Narrows**; while the names **Eastern Bay**, **Western Bay** and **Bartlett's Narrows** are given to the eastern, middle and western parts of the strait. It is about eight miles long from Meadow Point, its eastern point of entrance, to Oak Point, its western point, and varies in width from a mile at its eastern end to three-eighths of a mile wide at Haynes' Point, (just to the westward of the bridge,) and a quarter of a mile at Bartlett's Narrows. The river is very shallow, and entirely unfit for strangers. The villages of West Trenton, Trenton Point and East Trenton occupy its northern bank, and Eden, on Mount Desert Island, occupies the southern shore. **Trenton Point** is situated just to the westward of Meadow Point, at the eastern end of the strait. The harbor is formed by a wide but shallow cove making into the northern shore nearly two miles to the westward of Meadow Point, and is of little importance. The western point of entrance to it, called **Old Point**, is three miles to the westward of Meadow Point, and forms also the eastern point of entrance to Jordan's River, upon the eastern bank of which is built **East Trenton.**

Salisbury's Cove. A little over a mile to the westward of the entrance to Trenton River, and on the Mount Desert side, lies Salisbury's Cove, along the shores of which is built the village of **Eden.** There is anchorage in this cove for vessels of light draught. The shore is of moderate height, with a somewhat steep slope, and for the most part cleared and well settled, although occasional groups of trees appear. The cove is, for the most part bare at low water. Just to the westward is **Emory's Cove**, also bare at low water; and thence to Hadley's Point, about a mile and three-eighths above, the shores are lower and more gently sloping, for the most part cleared and settled; but showing occasional woods fringing the shore-line.

Googins' Ledge. About N. by E. from the mouth of Salisbury's Cove, three-quarters of a mile distant, and about NW. by N. from Sands' Point, seven-eighths of a mile distant, lies Googins' Ledge, dry at half ebb, and surrounded by shoal water. To the northward, eastward and southeastward the shoals extend for about two hundred and fifty yards, with from two to twelve feet water. On its western side twelve feet is found at a distance of one hundred yards. By giving the dry part of the ledge a berth of an eighth of a mile to the northward you will pass it in not less than four fathoms.

Hadley's Point. Hadley's Point, which is directly opposite to the harbor of Trenton Point, is a low, flat, bare point, backed by somewhat steep slopes, partly wooded and partly cleared. It is bold-to, and may be safely approached within two hundred yards with not less than four fathoms. All of this part of the river is deep and nearly unobstructed, and a wide channel with from four to eleven eleven fathoms exists.

Jordan's River is about three miles and a half long, and runs first about N. for a mile and a half, and then NNE. to its head. It is nearly a mile wide at its mouth, but the average width is about three-eighths of a mile. There is little trade, and the place is unfit for strangers to navigate.

Thompson's Island. One mile and a half to the southwestward of the mouth of Jordan's River the passage is apparently closed by a large island, almost entirely filling the space between the northern and southern shores. This is Thompson's Island, and is joined to the mainland on the north, and Mount Desert Island on the south, by bridges. It is a flat, rocky island, almost entirely cleared, but with a few houses on its northern side and some trees on its western and southwestern ends. Here is a bar, bare at low water, which effectually closes navigation.

About a mile to the westward of Hadley's Point, on the southern side of the strait, is **Thomas' Bay**, a large cove, of irregular shape, and dry at low water. In the middle of its mouth lies Thomas' Island, about half a mile long **N NW.** and **S SE.**, low, rocky and thickly wooded. On its northern side it is bold-to, and may be approached within one hundred and fifty yards with not less than four fathoms. Two small islets about two hundred yards from its eastern side are called **The Twinnies.** They are joined to each other and also to Thomas' Island at low water. **Thomas' Island.**

About midway between Thomas' Island and the bridge, and a quarter of a mile from the northern shore, is a bare rock, about twenty yards in diameter, called **Trap Rock.** At low water bare ledges surround it, extending to the southward about two hundred yards; and, in fact, there is no passage beyond Thomas' Island except at high water.

About three-eighths of a mile to the westward of Thompson's Island is Haynes' Point, on the northern shore, the eastern point of entrance to a large but shallow cove, called **Goose Cove,** on which is built **West Trenton.** It is a little over a mile long and about five-eighths of a mile wide, but is of no commercial importance. Exactly in its mouth, and nearly in the middle of the reach, lies **Alley's Island,** low, smooth and grassy, except at its northern end, which is well wooded with spruce and fir. There are two or three houses near the southern end. It is about a mile long in a **N.** and **S.** direction, and of an oval shape. **Haynes' Point.**

The southern shore of the river, when to the westward of Thompson's Island, takes an abrupt turn to the southward, running nearly **S.** for about a mile and a half to **Negro Point,**—the eastern point of entrance to Clark's Cove. The shore is about equally divided between low, cleared and gently sloping wooded lands, with occasional houses. Clark's Cove is about three-quarters of a mile wide between Negro Point and Indian Point, and affords anchorage in from two to four fathoms, entirely unobstructed. Between this cove and Alley's Island the river is called **Western Bay.** **Clark's Cove.**

Indian Point is almost entirely cleared except for a slight fringe of trees, and rises with a gentle slope to a height of eighty feet. On its western side, and half a mile off, lies Green Island, low, rocky and wooded, and about three hundred and fifty yards in diameter. Its southern end is only a hundred and fifty yards from the Mount Desert shore. Many dangerous ledges lie between Indian Point and Green Island, and to the northward and westward of the latter; but they are all bare at low water. **Green Island.**

Black Island lies half a mile **W.** by **N.** from Green Island, and extends about a quarter of a mile **N.** by **E.** and **S.** by **W.** It is about sixty feet high, steep, thickly wooded and bold-to,—eight fathoms being found within fifty yards of its northern end. Just to the southward of it, and about half a mile to the westward of Green Island, is High Head, the northwestern extremity of Mount Desert Island. It is a steep, wooded bluff, two hundred feet high, and may be safely approached within a hundred yards with not less than four fathoms. On its western side makes in to the southward a narrow and shallow cove, about a mile long, called **Squid Cove;** with a very small island in the middle of its mouth, called **Squid Island.** **High Head.**

Half a mile to the westward of Squid Cove is **Mill Cove,** small, irregular in shape, and shallow. Between the two, and about four hundred yards from shore, is *a dangerous, detached ledge, with two feet at low water,* and water sufficient for the largest vessels on all sides of it. It is not buoyed, as the river cannot be entered by strangers.

Bartlett's Narrows begin just to the westward of Mill Cove, extend in a southwesterly direction for nearly two miles, and vary in width from a quarter to half a mile. They are embraced between Bartlett's Island on the west and the Mount Desert shore on the east; and, although somewhat obstructed, offer a safe channel with not less than eight fathoms into Blue Hill Bay. Both shores are rocky and wooded, and vary in height from forty to one hundred feet. Half a mile to the southwestward of the eastern entrance to the Narrows lies *a dangerous rock, surrounded by shoal water,* almost exactly in the middle of the passage. The channel passes to the southward of it,—giving the bare rock a berth of about one hundred yards. **Bartlett's Narrows.**

A little over two miles to the westward of Alley's Island is Oak Point, the northern point of the western entrance to Trenton River and the eastern point of entrance to Union River Bay, leading up to Ellsworth. Oak Point is low, rocky, and dotted with clumps of trees. To the southward, one mile and a half, lies the southern point of the western entrance, called **Bartlett's Point,** the northeastern point of **Bartlett's Island,**—a large, thickly wooded island in Blue Hill Bay. **Oak Point.**

Trenton River being crossed by a bar dry at low water, no sailing directions can be given for it. Vessels bound through the draw must take a pilot.

There is good anchorage for vessels of any draught between Bartlett's Island and Mount Desert; but strangers must not attempt to pass through.

ICE IN FRENCHMAN'S BAY.

Ice forms in this bay and its harbors about the same time and in the same manner as in Englishman's Bay and Machias Bay;—and, like the formations in those bays, is purely local, except during severe winters, when a mass of "field" and "drift-ice" is formed, completely obstructing navigation. Winds have little influence in preventing or assisting the local formations; nor have the tides; but both assist in bringing in drift-ice from outside, and in carrying it off when the mass is broken up. Calms and light winds from the northwestward are favorable to a rapid increase in the local formation; while strong winds break it up and force it on shore to leeward. The bay is generally dangerous to navigate, even in moderate winters, from January 1st to March 1st; and in severe winters is closed from December to April.

In 1874–5, sailing-vessels found navigation exceedingly hazardous as early as the middle of January; and impossible after the twenty-fourth of that month. During February all access to the bay, or even a near approach to it, was cut off by an immense field composed of drift-ice "packed" together and frozen into a solid mass, which not only filled the bay, but extended several miles out to sea. The southwesterly, easterly and northeasterly winds which occurred in the latter part of that month broke this mass up and carried much of it to sea; but it did not finally disappear from the bay until the latter part of March; and the harbors remained, for the most part, closed several weeks later.

SOUTHERN SHORE OF MOUNT DESERT ISLAND.

Mount Desert Island. The general course of the southern shore of Mount Desert Island is about **E.** and **W.** from Otter Creek Point to Southwest Harbor. The shores are very high, steep and thickly wooded—the woods in some places extending one-third of the distance to the summits. There are several small and some large and excellent harbors on this shore, most of them easily accessible, and comparatively free from dangers.

Of these harbors the most easterly, and, consequently, the first one met with in coming from the eastward, is Otter Creek Harbor, lying on the western side of **Otter Creek Point**, or **Young's Point**, (as it is sometimes called,) and is formed by a long and narrow cove making in about **NNE.** at the south base of **Newport Mountain**, and about a mile long.

Otter Creek Harbor. Passing it, a cleared, grassy and gentle slope will appear at the head of the cove, upon which is situated a small settlement; and there are generally a number of small fishing vessels anchored in the cove. On the western side of the entrance a number of huts are seen on the outside beach. Otter Creek is a very useful harbor for small vessels, but has not enough water for large ones, and is untenable in southerly winds, as the sea heaves directly in; but one of its greatest advantages to strangers is that there are no obstructions, and vessels drawing six feet and less may steer boldly in as soon as they are past Otter Creek Point.

Seal Cove. Seal Cove, lying one mile and a half to the westward of Otter Creek, is not fit for strangers,—being ledgy and having only from two to three fathoms water. There are two or three low islets in its mouth and a few houses on its shores, whose owners generally have two or three fishing boats anchored in the cove in fine weather. In southerly gales these boats are hauled out,—the harbor being then unsafe, although somewhat protected by Little Cranberry Island.

Long Pond Harbor, or **Bracy's Cove**, lies next to the westward of Seal Cove, distant only about one-third of a mile. It is a small cove, connected at its northern end by a narrow gut with **Long Pond**, a small and shallow pond, upon the shores of which is built a hamlet known by the name of **The Pond.** This little harbor is situated at the base of **Bubble**

Long Pond Harbor. **Mountain**, in a narrow ravine separating it from **Green Mountain** to the eastward; and an excellent mark for it is a two-humped mountain standing in the gap between the two above mentioned. It is called **Dog Mountain**, and does not present this appearance unless viewed from the southward. When this mountain is in the middle of the gap between Green and Bubble mountains, Long Pond Harbor is open and may be safely run for. This harbor only affords shelter in northerly and easterly winds, and then only to light-draught vessels. In southerly winds there is no shelter. It has from one to two fathoms at low water.

In entering Long Pond Harbor the rule is to keep the eastern shore aboard. Avoid the western shore, as off the southwestern point of entrance lies *a ledge bare at half-tide*. Keeping the northeastern shore aboard, steer **NW.** by **N.**, which will lead safely in. Or, bring a peculiar-looking red house at the head of the cove to bear **NW.** and steer **NW.** by **N.**, as before. There are no obstructions other than the ledge off the southwestern point, just mentioned. A number of small vessels are usually to be seen anchored in the harbor, and there are a few houses visible,—among them the prominent red house mentioned above.

Next to the westward of Long Pond Harbor, and at distances of a mile and two miles, respectively, lie the excellent anchorages known as Northeast Harbor and Southwest Harbor. But, for a proper description of these it is necessary to mention and describe the various outlying islands off the southern shore of Mount Desert Island, guarding the approach. Of these there are six, namely: Baker's, Great and Little Cranberry, Sutton's, Bear and Greening's islands; but the most important are the four first named, which, lying along the southern shore, protect the passage between them and it from the sea in southerly winds and thus afford great accommodation to coasters. Besides, between the two Cranberries, and also between Great Cranberry and Mount Desert Island, are two harbors, excellent as anchorages for vessels of light draught.

Baker's Island and Light-house. Baker's Island is the most easterly of the group, and altogether the most prominent on account of the light-house upon it, which is a guide to Southwest and Northeast harbors and along the coast. Baker's Island Light-house is a white tower thirty-seven feet high, connected with a brown dwelling-house, and situated near the middle of the island. The light is fixed, varied by white flashes, and is shown from a height of one hundred and five feet above the sea. It is of the fourth order of Fresnel, and is visible fifteen miles. The flashes take place at intervals of one minute and a half. Its geographical position is

Latitude ..... **44° 14′ 27″ N.**
Longitude ..... **68° 11′ 56″ W.,**

and it is very useful as a guide to **Cranberry Island Harbor**, which is contained between Little Cranberry Island on the east and Great Cranberry on the west, and is much frequented.

Baker's Island is round, about five-eighths of a mile in diameter, of moderate height, and thickly wooded except on its northwestern side, where there are some houses on a cleared space. It is joined at low water to Little Cranberry Island by a

long bar or reef, which is, however, covered at high water. This bar forms the eastern breakwater to Cranberry Island Harbor. Baker's Island is seventeen miles **W.** by **S.** ½ **S.** from Petit Manan Light-house; sixteen miles **N.** ½ **E.** from Mount Desert Rock Light-house; and forty miles **NE.** by **E.** ½ **E.** from Matinicus Rock Light-houses, at the entrance to Penobscot Bay.

Little Cranberry Island.

Little Cranberry Island lies three-quarters of a mile to the northward of Baker's Island, with which, as before remarked, it is connected by a bar dry at low water. It is of very irregular shape, lies nearly **E SE.** and **W NW.**, and is about a mile and a quarter long, with low shores, mostly thickly wooded, but in places cleared, cultivated and settled. The settlements are nearly all at the western end,—the rest of the island being thickly wooded. The harbor is contained between this and Great Cranberry, and has from two to four fathoms at low water. It is the intention of the United States Government to establish a life-saving station on this island, provided with all the means for assisting those who are shipwrecked and in distress.

Great Cranberry Island.

Great Cranberry Island is very irregular in shape, lies nearly **N.** and **S.**, and is a mile and three-quarters long. Its shore-line is much indented, especially upon the eastern side, where a long, irregularly shaped and shallow cove makes in, called **The Pool.** In this (which runs nearly **N.** and **S.**, and is sheltered on the east by a long, low, sandy point, dotted here and there with trees) from two to four feet may be found at low water. At its southeastern end this island approaches within a quarter of a mile of Little Cranberry, but there is no passage between them from the southward,—a four-feet bar crossing from one to the other. This southeastern point, which is low, flat and bare, is called **Dead-Man's Point.** The northwestern end of the island is called **Sperlin's Point,** showing a nearly flat, grassy surface, about ten or fifteen feet high, backed by trees, with a clump or grove of dark-looking trees on its extreme point. A large white church steeple shows above the trees and is a very prominent mark. **Bunker's Head** lies on the southern shore of this island, just to the westward of Dead-Man's Point, and is a high head, bare of trees, somewhat steep on its southern side, and tolerably bold-to.

Great Cranberry is mostly thickly wooded, but in places, especially on the eastern side, is well settled and cultivated. The wharf-line of the settlement is along the western shore of The Pool,—access being thus easily had by Cranberry Island Harbor either east or west.

Sutton's Island.

Sutton's Island, lying about three-quarters of a mile to the northward of Great Cranberry Island and about the same distance from the Mount Desert shore, stretches across the mouth of Cranberry Island Harbor, thus protecting it from northerly winds. It is a little more than a mile long, lies nearly **E.** and **W.**, is rocky, of moderate height, and wooded with spruce and fir except near the middle, on the northern shore, where there is a small clearing, with house and barn, and at the western end, where level, grassy land extends into a low point, upon which stands a small clump of stunted trees. This island is bold-to except on its eastern end, which should not be approached nearer than an eighth of a mile on account of some dangerous ledges, out at low water, lying off the shore.

Bear Island and Light-house.

Nearly half a mile to the northward of Sutton's Island, and almost directly opposite to the mouth of Northeast Harbor, lies Bear Island, upon which is built the light-house which guides to that harbor. It is of an oval shape, about four hundred yards long, and lies about four hundred yards from the Mount Desert shore. The land is of moderate height, rocky, and bare of trees except at its western end. This western end terminates in a high, steep, round bluff, with grassy surface, and fringed with a grove of spruce and fir trees clinging to its sides. The light-house, which is called Bear Island Light-house, is of red brick, attached to a dwelling of the same color, and is surmounted by a white lantern. It is twenty-two feet high, and shows a fixed white light, of the fifth order of Fresnel, from a height of ninety-seven feet above the sea, visible thirteen miles in an ordinarily clear night. Its geographical position is

Latitude ..... **44° 16′ 59″ N.**
Longitude ..... **68° 16′ 12″ W.**

Greening's Island.

Greening's Island, lying in the mouth of Somes' Sound, about a mile to the westward of Bear Island and seven-eighths of a mile from Sutton's Island, forms part of the northern shores of Southwest Harbor,—the entrance being between it and **King's Point,** on the southern shore. Seen from the eastward it appears low and sandy, with a grassy surface, backed by a thick growth of trees. These trees occupy the whole of the middle of the island, extending from its northern to its southern end. Part of the extreme western point is also cleared, has a grassy surface, and two or three fish-houses upon it. Greening's Island lies **NW.** and **SE.**, is very irregular in shape, about three-quarters of a mile long, and tolerably bold-to on its northeastern side, where lies the entrance to Somes' Sound. There is no passage into the Sound to the westward of the island except for vessels of light draught.

NORTHEAST HARBOR

lies just to the eastward of Somes' Sound,—the entrance being only five-eighths of a mile from **Gilpatrick's Point,** usually considered the eastern point of entrance to the Sound. It is a somewhat narrow cove, running **N.** and **S.**, and a little over three-quarters of a mile long; but affords anchorage in from two to three fathoms, with good holding-ground. About three-eighths of a mile above the entrance it widens out into a shallow cove about six hundred yards wide, having from three to six feet water. The shores of the harbor are mostly low and thickly wooded;—the only prominent feature being at the eastern point of the entrance, which is low, thickly wooded with a variety of trees, and shows a remarkable white sand beach where it joins the higher lands.

DANGERS

IN APPROACHING AND ENTERING NORTHEAST HARBOR.

As Southwest Harbor is much the better and safer anchorage of the two, vessels will never attempt to enter Northeast Harbor except in coming from the eastward or southeastward. So doing, when off the coast the light-house on Mount Desert Rock will first be seen, which lies sixteen miles **S.** ¾ **W.** from Baker's Island; twenty-seven miles **SW.** ¼ **S.** from Petit Manan Island; and fifty-five miles **W.** by **S.** ¾ **S.** from Machias Seal Island.

Mount Desert Rock and Light-house.

The rock is a small, barren islet, elevated about fifteen feet above the sea. The light-house is known as Mount Desert Light-house, and is a granite tower sixty feet high, standing near the keeper's dwelling, also of granite, but whitewashed. The light is fixed white, of the third order of Fresnel, shown from a height of seventy-five feet above the sea, and is visible fourteen miles. Its geographical position is

Latitude	43° 58′ 7″ **N.**
Longitude	68° 7′ 42″ **W.**

The **fog-signal** at this light-house is a bell struck by machinery.

Columbia Ledge.

Columbia Ledge, having three fathoms, (according to Captain Owen, R. N., who surveyed it,) lies **SW.** by **S.** from Mount Desert Rock, about twelve hundred yards distant. Inside of it there are twenty-two fathoms, while outside and close to the rock are found seventeen, eighteen, twenty, twenty-five, thirty and thirty-five fathoms water. This ledge was surveyed in 1877 by Lieutenant J. F. Moser, U. S. N., Assistant, Coast Survey, who found four fathoms upon it at mean low water. According to Lieutenant Moser, the shoal of the ledge bears from Mount Desert Rock Light-house **S SW.**, distant fifteen hundred yards.

Passing Mount Desert Rock, there are no dangers until past Baker's Island, when, if beating, do not stand too close to Little Cranberry Island, to avoid Harding's Ledge, with three feet at mean low water, lying four hundred yards from the eastern end of Little Cranberry, with no passage between it and the island. This ledge is marked by a black spar-buoy (No. 1) placed in five fathoms on the eastern end of the ledge. It bears **N.** ¼ **W.** from Baker's Island Light-house, distant a mile and a quarter. When up with it, a square beacon will be seen bearing about **N NW.** and nearly a mile and a half off. This is on Bunker's Ledge, a small, bare ledge, (surrounded by others out at low water and half-tide,) lying five-eighths of a mile from the Mount Desert shore and nearly in the middle of the passage, which is known as **Mount Desert Eastern Passage.** There is equally deep water on both sides of this rock, and it may be passed on the southern side in thirteen fathoms by giving it a berth of three hundred and fifty yards; but on the northern side it should receive a berth to the southward of at least a quarter of a mile to avoid *a detached rock lying on this side.* The beacon is of grey stone, known as **Bunker's Ledge Monument,** and stands on the dry part of the ledge. From it Bear Island Light-house bears **W NW.**, two miles distant.

Harding's Ledge.

Bunker's Ledge.

Lewis' Rock is a detached rock, with six feet at mean low water, lying nearly four hundred yards to the northward of Bunker's Ledge Monument, and is consequently not in the way of vessels passing along the southern side of Bunker's Ledge. But coming from the eastward, along the Mount Desert shore, leave it to the southward. As a guide to this passage, it is marked by a black spar-buoy (No. 3) placed on its northern side close to the shoal of the rock.

Lewis' Rock.

Bowden's Ledge.

Bowden's Ledge, off the western point of entrance to Seal Cove, is the first danger met with to the westward of Bunker's Ledge. It has two feet at mean low water, lies about three hundred yards from shore, and is marked by a red spar-buoy (No. 2) (placed in five fathoms on the southeastern side of the shoal,) bearing **NW.** ¾ **W.** from Bunker's Ledge Monument, distant about seven-eighths of a mile; and from the buoy Bear Island Light-house bears **W.** by **N.**, distant nearly a mile and a quarter.

When past the buoy on Bowden's Ledge, another red spar-buoy will appear half a mile to the westward. This is on Long Pond Shoal, another detached ledge, with five feet at mean low water, lying nearly in mid-channel and off the mouth of Long Pond or Bracy's Cove. From Bunker's Ledge Monument it bears **W NW.**, distant nearly a mile and a half; from Bowden's Ledge it bears **W.** ¼ **N.**, distant a little over half a mile; and from it Bear Island Light-house bears **W.** by **N.** ½ **N.**, distant twelve hundred yards. The buoy is marked No. 4, placed in twenty-one feet on the southern side of the rock, and is to be left to the northward, although there is a good passage with four fathoms between it and the Mount Desert shore.

Long Pond Shoal.

There is no passage between Bear Island and Mount Desert except for vessels of very light draught. As soon as you are up with the light on this island the harbor is open and the course leads to the northwestward, towards a red spar-buoy lying nearly in the middle of the entrance. This is on Northeast Harbor Ledge, bare at low water, and having six fathoms water all around it. The buoy, which is marked No. 8, is placed about **W.** from the bare rock, in three fathoms water, and bears from Bear Island Light-house **NW.** ½ **W.**, about six

Northeast Harbor Ledge.

hundred yards distant, and is to be left to the eastward; but a good passage, with five fathoms, exists between it and the northeastern shore. When past this buoy there are no dangers in the channel, and it is only necessary to caution vessels, in beating, not to stand too far to the eastward, as there is *a sunken ledge, with four feet at low water*, an eighth of a mile from the eastern shore, which is not buoyed.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING NORTHEAST HARBOR.

I. ***From the Eastward, by the Mount Desert Eastern Passage.***—From Schoodic Point steer **W.** ½ **S.**, with not less than twelve fathoms, up to Bunker's Ledge. When the Monument is seen, shape the course so as to pass about three hundred and fifty yards to the southward of it. When it bears **NE.** by **N.** ¾ **N.**, and Baker's Island Light-house is just open to the eastward of Little Cranberry Island on a bearing of **S.** by **E.**, there will be thirteen fathoms, rocky bottom, and Bear Island Light-house will bear **NW.** by **W.** ¾ **W.** Steer for it, carrying not less than seven fathoms, until within half a mile of the light and past Long Pond Shoal buoy, when gradually edge to the southward so as to pass a little over three hundred yards to the southward of Bear Island. A **W.** ¾ **N.** course will lead safely past the island with not less than seven fathoms. When the light bears **NE.** by **N.** ¼ **N.**, about three hundred yards distant, and you are in eleven fathoms, steer **NW.** ¾ **N.** for about six hundred yards, or until the light bears **E SE.**; when a **N.** course leads, with not less than nineteen feet, up the middle of the harbor, when you may anchor at discretion, in from six feet to three fathoms, good holding-ground.

These courses pass a little over three hundred yards to the southward of Bunker's Ledge; six hundred yards to the southward of Bowden's Ledge; an eighth of a mile south of Long Pond Shoal; the same distance to the southward of Bear Island; and about one hundred and fifty yards to the westward of Northeast Harbor Ledge.

II. ***To pass north of Bunker's Ledge and enter Northeast Harbor.***—Keep the Mount Desert shore aboard until Bunker's Ledge Monument bears **W.**, distant one mile and a half, when steer **W.** by **N.** for Bear Island Light-house, carrying not less than ten fathoms water. On this course continue until Bunker's Ledge Monument is in range with Baker's Island Light-house on a bearing of **S.** ¾ **E.**; when you will be past Lewis' Rock, and in ten and a half fathoms, rocky bottom. Now steer **W.**, heading between Greening's and Sutton's islands, and carrying not less than nine and a half fathoms; and when off the entrance to Bracy's Cove, (or Long Pond Harbor,) in nine and a half fathoms, hard bottom, with Bear Island Light-house bearing **NW.** by **W.** ¾ **W.**, steer **W.** by **N.** ½ **N.**, with nothing less than eight fathoms water for about seven-eighths of a mile, or until Bear Island Light-house bears **NE.** by **N.** ¼ **N.**, three hundred yards distant. Then steer **NW.** ¾ **N.**, and follow the directions for the harbor.

It may be remarked that the **W.** course mentioned above leads clear of all dangers into Southwest Harbor.

The above courses pass a little over three hundred and fifty yards to the northward of the northern end of Bunker's Ledge, and nearly three-eighths of a mile **N.** of the Monument; an eighth of a mile to the northward of Lewis' Rock; four hundred yards to the southward of Bowden's Ledge; three hundred and fifty yards to the southward of Long Pond Shoal; an eighth of a mile to the southward of Bear Island; and one hundred and fifty yards to the westward of Northeast Harbor Ledge.

III. ***To come from the Southward or from Sea and enter Northeast Harbor.***—Bring Baker's Island Light-house to bear **N.** and run for it, but gradually edge to the eastward on approaching the island so as to pass half a mile to the eastward. When abreast of the light steer **N NW.**, which course will lead, with nothing less than fourteen fathoms, direct for Bunker's Ledge Monument. On this course, when Bear Island Light-house bears **NW.** by **W.** ¾ **W.**, and you are a quarter of a mile from the Monument, with fourteen fathoms, rocky bottom, steer for the light-house and follow the directions given for this passage.

These courses pass four hundred yards to the eastward of Harding's Ledge buoy, and a little over three hundred yards to the southward of Bunker's Ledge Monument.

At night-time, when Baker's Island Light-house is shut in behind Little Cranberry Island, Bunker's Ledge is to the eastward. *Or*, when that light bears **S.** by **E.** ¼ **E.**, you are past the ledge.

Anchorage in from eight to twelve fathoms may be found to the westward of Bear Island Light-house, having it bearing from **E.** to **E NE.**, and about three-eighths of a mile off.

SOUTHWEST HARBOR

lies just to the southward of the entrance to Somes' Sound, and is formed by a cove making in a westerly direction on the Mount Desert shores, and by Greening's Island,—the latter protecting it from northerly and northeasterly winds. Thus formed, the harbor is somewhat over a mile and a quarter long in an **E SE.** and **W NW.** direction, and has an average width of six hundred and fifty yards. The anchorage is excellent, the shelter good, and from two to nine fathoms is found, with soft bottom,—thus affording accommodations for the largest vessels.

There are several passages leading into this harbor,—one on the northern and another on the southern side of Bunker's Ledge; one between Little Cranberry and Sutton's islands; and one (fit only for vessels of less draught than twelve feet) between Great Cranberry and Mount Desert islands. All are fit for the largest vessels except the last named.

Duck Islands. The Duck islands are two—**Great** and **Little Duck.** The latter lies three and a half miles to the southward of Cranberry Island, is nearly round, about three-eighths of a mile in diameter, rocky, and for the most part well wooded. Great Duck Island lies about three-quarters of a mile to the southward of Little Duck, and is extremely narrow,—being one mile long, and having an average width of about five hundred yards. It lies nearly **N NE.** and **S SW.**, is of moderate height, and is particularly noticeable when viewed from the northward and westward for a peculiar-looking open space in the centre;—this appearance being caused by a clearing which crosses the island at this point, while the rest of it is thickly wooded.

Greening's Island. Greening's Island, already described, (see page 135,) lies on the northern side of this harbor, extending in a **NW.** and **SE.** direction, and is three-quarters of a mile long. Seen from the eastward it appears low and sandy, with grassy surface, backed by thick woods. From the westward or harbor side it shows gentle, grassy slopes, partly cultivated and also backed by woods. The centre of the island is thickly wooded.

King's Point. The southern side of the entrance to Southwest Harbor is formed by the southeastern point of the entrance to the cove above mentioned, called King's Point. It is low, partly composed of rock and partly shingle, and is backed by a thick but stunted growth of spruce and fir. A thin and scanty growth is seen also in places near the end of the point.

Clarke's Point. Clarke's Point, the northern point of entrance to the cove, is easily recognized by the large steamboat wharf, on which is also built a packing-house for putting up lobsters. It is a little over a quarter of a mile to the westward of Greening's Island, and there is a good passage between them, with fifteen feet at low water, leading to the northward into Somes' Sound. It is unsafe for strangers, as the rocks in it are not buoyed. The settlement occupies both shores of the cove as well as its head. It is of no commercial importance, but is quite a watering-place,—the hotels forming conspicuous marks in coming in from the eastward.

DANGERS

IN APPROACHING AND ENTERING SOUTHWEST HARBOR.

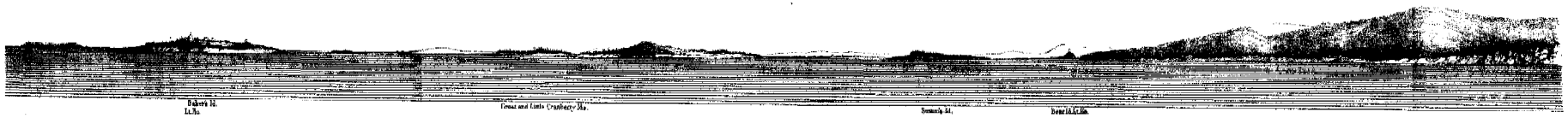
I. ***From the Eastward, by the Mount Desert Eastern Passage, north of Bunker's Ledge.***—

Lewis' Rock. The most of the dangers in this passage are common to the approaches of this harbor, Northeast Harbor and Cranberry Island Harbor. The first met with by those using the northern channel is Lewis' Rock, a detached rock, with six feet at mean low water, lying nearly three-eighths of a mile off the Mount Desert shore and four hundred yards to the northward of Bunker's Ledge Monument. A black spar-buoy (No. 3) is placed on its northern side, close to the shoal of the rock, and is to be left to the southward.

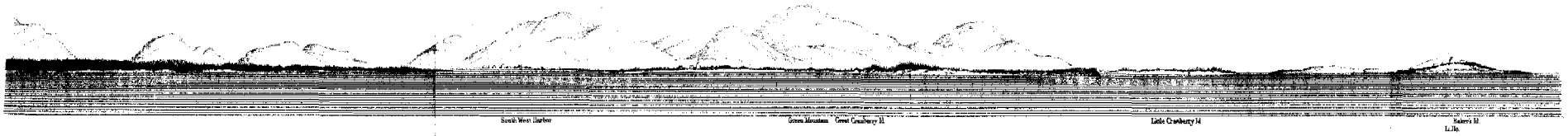
Bunker's Ledge. Bunker's Ledge lies a very little to the southeastward of Lewis' Rock, and the shoal water surrounding it extends to the southern side of this passage. It is a mass of shoal ground, extending in a **N NE.** and **S SW.** direction, about a quarter of a mile long, and is composed of dry ledges, ledges bare at low water and sunken rocks. On the dry part of the ledge, near its southern end, is built a square beacon of grey stone. From this beacon, which is called **Bunker's Ledge Monument,** Baker's Island Light-house bears **S. ¼ E.** and Bear Island Light-house **W NW.** (See page 136.)

Bowden's Ledge. When past Lewis' Rock a red spar-buoy will be seen to the westward, bearing about **W.** by **N.** or **W NW.** This is on Bowden's Ledge, with two feet at mean low water, lying off the western point of entrance to Seal Cove, about three hundred yards from shore. The buoy is in five fathoms, on the southeastern side of the shoal, is marked No. 2, and bears **NW. ¼ W.** from Bunker's Ledge Monument, seven-eighths of a mile distant. Bear Island Light-house bears from this buoy **W.** by **N.**, distant nearly a mile and a quarter. (See page 136.)

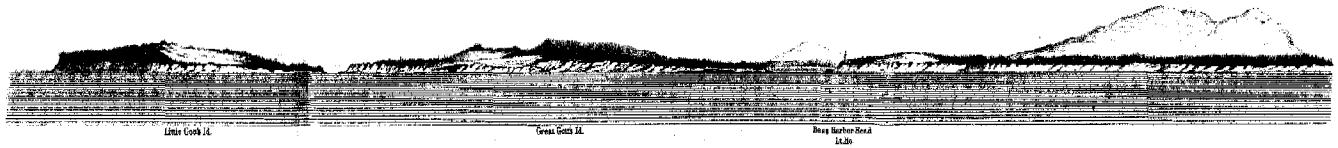
Long Pond Shoal. When up with the buoy on Bowden's Ledge another red spar-buoy will be seen, bearing about **W NW.**, and half a mile off. This is on Long Pond Shoal, another detached ledge, with five feet at mean low water, lying nearly in mid-channel off the mouth of Long Pond Harbor or Bracy's Cove. From Bunker's Ledge Monument it bears **W NW.**, distant nearly a mile and a half; from Bowden's Ledge **W. ¼ N.**, distant a little over half a mile; and from it Bear Island Light-house bears **W.** by **N. ½ N.**, distant twelve hundred yards. The buoy is marked No. 4, and is placed in twenty-one feet on the southern side of the rock. Leave it to the northward. (See page 136.)



Mount Desert Eastern Pass and Approaches to Southwest Harbor from the Eastward, Baker's Id. Lt. Ho. bearing S.W. by W. ¼ W. distant ¼ Miles.



Entrance to Southwest Harbor from the Southward and Westward, Baker's Id. Lt. Ho. bearing N.E. by E. ¼ E. distant 5¼ Miles.



Entrance to Bass Harbor from between Duck and Goat's Islands, the Lt. Ho. bearing N. by W. ½ W. distant ½ Miles.

When past Long Pond Shoal buoy there is nothing in the way until you are past the eastern point of Greening's Island, when you must look out for Greening's Ledge, lying off the southern shore of the island, near its western end, having a foot and a half at mean low water, and bare at spring tides. The shoal of this ledge is a little over two hundred yards from the shore of Greening's Island, and there is no passage between it and the island. This ledge is marked by a red spar-buoy (No. 6) placed in three fathoms water on the southern end of the shoal. It serves both for Southwest Harbor and the passage between Greening's Island and Clarke's Point into Somes' Sound. There are no dangers after passing this ledge. *Greening's Ledge.*

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING SOUTHWEST HARBOR.

I. ***From the Eastward, by the Mount Desert Eastern Passage, north of Bunker's Ledge.***— Keep the Mount Desert shore aboard until Bunker's Ledge Monument bears **W.**, distant one mile and a half, when steer **W.** by **N.** for Bear Island Light-house, carrying not less than ten fathoms water. When Bunker's Ledge Monument is in range with Baker's Island Light-house on a bearing of **S.** ¾ **E.**, you are past Lewis' Rock, and there is ten and a half fathoms water, rocky bottom. Steer **W.**, which course will lead, with not less than seven and a half fathoms, to the entrance to Southwest Harbor. When, in nine fathoms, soft bottom, the eastern point of Greening's Island bears **NE.** a quarter of a mile off, and the steamboat wharf on Clarke's Point bears **NW.** by **W.** ½ **W.**, distant three-quarters of a mile, steer **W.** by **N.** ½ **N.** to the anchorage, carrying not less than four fathoms to the usual anchoring-ground and not less than eight feet to the head of the cove.

If of very large draught, (say twenty-four feet and over,) when, as above, the steamboat wharf on Clarke's Point bears **NW.** by **W.** ½ **W.**, steer for it, and anchor abreast of Greening's Ledge buoy, in nine fathoms, soft bottom, and a quarter of a mile from the wharf.

The above courses pass about three hundred and fifty yards to the northward of the northern end of Bunker's Ledge, and nearly three-eighths of a mile north of the Monument; an eighth of a mile to the northward of Lewis' Rock; four hundred yards to the southward of Bowden's Ledge; a quarter of a mile to the southward of Long Pond Shoal; a little over a hundred yards to the northward of the western end of Sutton's Island, (in eight fathoms water;) and from an eighth of a mile to fifty yards to the southward of the buoy on Greening's Ledge.

DANGERS

IN APPROACHING AND ENTERING SOUTHWEST HARBOR.

II. ***From the Eastward, by the Mount Desert Eastern Passage, south of Bunker's Ledge.***— The dangers in this passage are the same as those for the north channel, with the exception of Lewis' Rock, which, as the course passes to the southward of the Monument, is not in the way.

But, in passing to the southward of Sutton's Island, you must look out for Sperlin's Rock, lying nearly in the middle of the passage between that island and Great Cranberry. It has but seven feet at mean low water, and at low springs but three feet; and is marked by a red spar-buoy (No. 2) placed in three fathoms just to the northward of the ledge. The sailing-line passes to the northward of this buoy; and, in thick weather, the Sutton's Island shore must be kept aboard to avoid it. *Sperlin's Rock.*

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING SOUTHWEST HARBOR.

II. ***From the Eastward, by the Mount Desert Eastern Passage, south of Bunker's Ledge.***— From Schoodic Point steer **W.** ½ **S.**, which will lead, with not less than twelve fathoms, up to Bunker's Ledge. When the Monument is seen, shape the course to pass about three hundred and fifty yards to the southward of it; and when it bears **NE.** by **N.** ¾ **N.** and Baker's Island Light-house is just open to the eastward of Little Cranberry Island on a bearing of **S.** by **E.**, there is thirteen fathoms, rocky bottom; and when Bear Island Light-house bears **NW.** by **W.** ¾ **W.**, steer for it, carrying not less than ten fathoms, until the eastern end of Sutton's Island bears **S.** ¾ **E.**, when there will be nine and a half fathoms, hard bottom. Now steer **W.** until up with the entrance to Southwest Harbor, when **W.** by **N.** ½ **N.** will lead safely in.

Sailing Directions--Southwest Harbor.

III. ***To pass to the Southward of Sutton's Island and enter Southwest Harbor.***—Pass half a mile to the southward of Bunker's Ledge Monument, and when Baker's Island Light-house is just open to the southward of Little Cranberry Island on a bearing of **S.** by **E.**, there will be fourteen fathoms, rocky bottom. Now steer **W.** ¼ **N.**, which course will lead along the northern shore of Little Cranberry, and between it and Sutton's Island, with not less than four fathoms. When abreast of the middle of Sutton's Island, and **Long Point** (the northeastern point of Great Cranberry) bears **S.** ¼ **E.**, about five-eighths of a mile distant, steer **NW.** by **W.** ½ **W.**, which course will lead, with not less than nine fathoms, up to the entrance to Southwest Harbor. There are no dangers except two or three small spots, with sixteen feet at mean low water, lying off the entrance to Cranberry Island Harbor.

On the above courses, to enter Cranberry Island Harbor.—On the **W.** ¼ **N.** course, when the eastern extremity of Sutton's Island bears **N.** ¼ **W.** and Long Point **SW.**, there will be six fathoms. Steer for the point until within a third of a mile of it and the wharf in **Hadlock's Cove** bears **SE.** by **E.** ¼ **E.**, when there will be four fathoms water almost exactly in the middle of the entrance, and you may either anchor, or steer **S.** by **W.** towards the head of the harbor, anchoring according to draught. Good anchorage is found in from nine to eighteen feet, well sheltered from all winds. Vessels of very light draught frequently run into The Pool by passing between Long Point and the cleared point, with two houses on it, forming the southern side of the entrance to The Pool. Here they either run alongside the wharves and lie aground, or anchor in the middle and lie aground there; but care is necessary to avoid the numerous ledges with which the bed of The Pool is obstructed. Only two feet at low water may be taken in, and the passage is never used except by the small fishermen.

DANGERS

IN APPROACHING AND ENTERING SOUTHWEST HARBOR.

III. ***Coming from the Westward, by the Cranberry Island Passage.***—Approaching by this passage, it must be remembered that not more than fourteen feet at low water can be carried through it,—that being the best water on Cranberry Island Bar.

The usual course is, when up with Long Island, to steer about **NNE.** until past Gott's Island. On this course there will soon be seen to the northward a black spar-buoy. This is on The Drums, very dangerous ledges dry at two-thirds ebb, lying two miles and three-eighths **NE.** ¾ **N.** from the southeastern end of Long Island, and two miles and seven-eighths **W NW.** from the southern end of Great Duck Island. The buoy, which is marked No. 5, is placed about two hundred feet to the southeastward of the ledge in five fathoms water.

The Drums.

Horse-Shoe Ledge.

Nearly a mile **N.** by **E.** ½ **E.** from The Drums lies Horse-Shoe Ledge, with six feet at low water, and not buoyed. As it is an important obstruction, however, a buoy will be recommended.

When past Gott's Island bring Bear Island Light-house to bear **NE.** by **N.** ½ **N.** and steer for it. On this course there will soon be seen to the northeastward a black can-buoy, and a red spindle to the eastward. The former is on the eastern point of Long Ledge, making off from the Mount Desert shore in a southeasterly direction over half a mile. Two bare rocks, called **The Knubble**, rise from about the middle of this ledge, which is bare at low water to a distance of over three-eighths of a mile from shore. The buoy is a can of the second class, marked No. 1, and placed in three fathoms water on the southeastern point of the ledge, and is to be left to the westward.

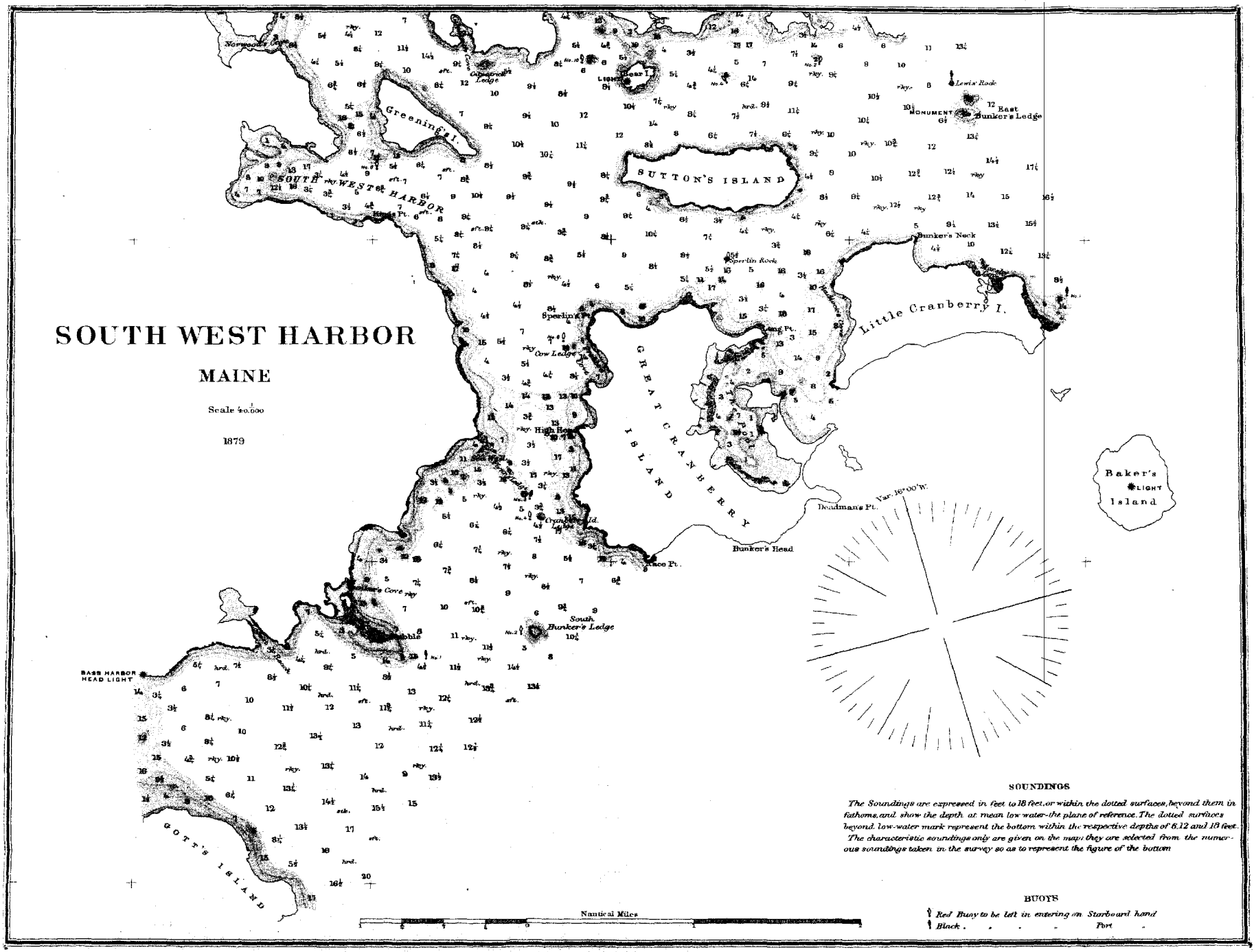
Long Ledge.

The red spindle seen to the eastward is on Bunker's Whore Ledge, a large detached ledge, with deep water on all sides, lying three-quarters of a mile **W.** by **S.** ¾ **S.** from **Race Point**, (the southwestern extremity of Cranberry Island,) and due **E.** from the buoy on Long Ledge, distant five-eighths of a mile. It is bare at half-tide and very dangerous. The spindle, which is surmounted by a cage, is placed on top of the rock, and is to be left to the northward. A channel, through which not less than seven fathoms may be taken, exists between this ledge and Great Cranberry Island; but the rule is to pass to the westward of the spindle.

Bunker's Whore Ledge.

Continuing the course towards Bear Island Light-house, when past the red spindle on Bunker's Whore Ledge there will be seen ahead, about two-thirds of a mile off, two spar-buoys nearly in range with each other. The nearest, a red buoy, is on Cranberry Island Ledge, a small detached ledge, with four feet water, lying about five hundred yards from the Cranberry Island shore and about two-thirds of a mile to the northward of the spindle on Bunker's Whore Ledge. The buoy is marked No. 2, placed on its southwestern side in eighteen feet water, and must be left to the eastward. About an eighth of an mile to the northward is

Cranberry Island Ledge.


SOUTH WEST HARBOR
MAINE
Scale 1/10,000
1879
Greening I.
SOUTH WEST HARBOR
SUTTON'S ISLAND
Little Cranberry I.
GREAT CRANBERRY ISLAND
Baker's Island
LIGHT
Deadmans Pt.
Bunker's Head
Var. 16° 00' W.
East Bunker's Ledge
South Bunker's Ledge
Bunker's Neck
Lewis Rock
Spurling Rock
Cow Ledge
High Rock
Sperling Rock
Crane Pt.
BASS HARBOR HEAD LIGHT
GOTT'S ISLAND
Nautical Miles
SOUNDINGS
The Soundings are expressed in feet to 18 feet, or within the dotted surfaces, beyond them in fathoms, and show the depth at mean low water-the plane of reference. The dotted surfaces beyond low-water mark represent the bottom within the respective depths of 6, 12 and 18 feet. The characteristic soundings only are given on the map; they are selected from the numerous soundings taken in the survey so as to represent the figure of the bottom
BUOYS
Red Buoy to be left in entering on Starboard hand
Black . . . . Port .

a black spar-buoy, on the southeastern end of Flynn's Ledge, making off from Sea-Wall Point, sometimes called Flynn's Point, about SSE. for half a mile, and has five feet at low water upon it close to the buoy. This buoy is marked No. 3, and is placed in eighteen feet water. The channel here makes an abrupt turn to the eastward, passing between this and Cranberry Island Ledge, and is only about an eighth of a mile wide. When past Flynn's Ledge it again turns abruptly to the northward, crossing the Bar in fourteen feet water. *Flynn's Ledge.*

The only danger met with on this course is High Head Shoal, having ten feet at mean low water. It lies about three hundred yards off High Head and a little over three-eighths of a mile NE. ¾ N. from Flynn's Ledge buoy. It is not marked in any way. *High Head Shoal.*

When past High Head you will cross *Cranberry Island Bar*, stretching from Great Cranberry Island to the Mount Desert shore, and having fourteen feet upon it,—the best water being nearly in the middle, but rather nearer to the Mount Desert shore. There is no buoy,—those who use this passage generally taking a pilot. When over the Bar, a red spar-buoy will be seen to the northeastward, on Cow Ledge, bare at low water, and lying three hundred yards to the westward of Sperlin's Point, (the northwestern extremity of Cranberry Island,) and on the northern side of the entrance to Preble's Cove. The buoy is marked No. 4, is placed on the western side of the ledge in twelve feet water, and is to be left to the eastward. There is no passage between this buoy and Cranberry Island. *Cow Ledge.*

When past Cow Ledge there are no more dangers until Southwest Harbor is entered, when look out for Greening's Ledge, lying off the southern shore of Greening's Island, near its western end, and bare at low spring tides. A red spar-buoy (No. 6) is placed in three fathoms water on the southern side of the shoal, and serves both for Southwest Harbor and the passage between Clarke's Point and Greening's Island into Somes' Sound. *Greening's Ledge.*

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING SOUTHWEST HARBOR.

IV. ***Coming from the Westward, through the Cranberry Island Passage.***—When up with Long Island, (which is off the entrance to Blue Hill Bay,) give its southeastern end a berth to the westward of a mile and a half, and steer NNE. about for the southwestern end of Great Cranberry Island, leaving the Duck Islands to the eastward. On this course, when Baker's Island Light-house bears ENE., distant four and a half miles, and you are abreast of the southeastern end of Gott's Island, steer N. by E. for Flynn's Point until abreast of the spindle on Bunker's Whore Ledge, and Bear Island Light-house bears NE. by N. ½ N.; when steer for it, passing about midway between the red spindle on Bunker's Whore Ledge and the black buoy on Long Ledge, and carrying not less than six fathoms water. When abreast of the red buoy on Cranberry Island Ledge, steer NE. by E. ¼ E. for a little over an eighth of a mile, passing midway between this buoy and the black buoy on Flynn's Ledge. When the latter is a little abaft the beam and Sea-Wall or Flynn's Point bears NW. by N. ⅜ N., steer N. by E. Northerly, which course will lead across the Bar in not less than fourteen feet water, and up with the entrance to the harbor. When the steamboat wharf on Clarke's Point bears NW. by W. ½ W. steer for it, and anchor in nine fathoms south of Greening's Ledge buoy. *Or*, on the course for the steamboat wharf, when the eastern point of Greening's Island bears NE. half a mile off, and you are in nine fathoms water, soft bottom, steer W. by N. ½ N., carrying not less than four fathoms to the usual anchoring ground and not less than eight feet to the head of the cove.

The above courses pass a mile to the eastward of The Drums; a mile and an eighth to the eastward of Horse-Shoe Ledge; one-third of a mile to the eastward of the buoy on Long Ledge; about four hundred yards to the westward of the spindle on Bunker's Whore Ledge; close to, to the westward of the red buoy on Cranberry Island Ledge; close to, to the eastward of Flynn's Ledge; two hundred and fifty yards to the westward of High Head Shoal; a quarter of a mile to the westward of Cow Ledge; and fifty yards or an eighth of a mile to the southward of the buoy on Greening's Ledge, according as you are steering for the wharf on Clarke's Point or using the course W. by N. ½ N. to the usual anchorage.

SOMES' SOUND

is an arm of the sea extending into the shores of Mount Desert Island in a northerly direction about four miles and a half. Its shape is irregular and its width varies,—being less than a quarter of a mile wide a little above Manchester Point, and widest at its head, (between Broad and Sargent's coves,) where it is three-quarters of a mile wide. It has very deep water, and is almost entirely unobstructed; but its navigation by sailing vessels requires care and prudence, as it is subject to sudden gusts and heavy flaws from the mountain gorges, which are apt to throw a vessel down with scarcely a moment's warning.

The general course of the Sound is N. by E. and S. by W., between high, steep, rocky shores, (in many places almost perpendicular,) formed by the slopes of **Brown's Mountain** on the east and **Flying** and **Robinson's** mountains on the west. Both shores are, for the most part, thickly wooded.

At the head of the Sound, and on its western shores, is **Somes' Harbor**, a large cove of irregular shape, lying nearly **NE.** and **SW.**, and a little over a mile long. On its northwestern bank stands the little village of **Somesville**, where there is some trade in lumber and ship-building. There is good anchorage in Somes' Harbor in from two to five fathoms; but vessels cannot approach the wharves except at high water, as the whole of the western side of the cove is full of shoals.

Greening's Island. In the mouth of Somes' Sound lies Greening's Island, before described on pages 135 and 138 as forming part of the northern shores of Southwest Harbor. It divides the entrance to the Sound into two channels,—the main channel passing along the eastern face. Seen from the eastward it appears low and sandy, with a grassy surface, backed by thick woods, while its western side shows cleared, gentle slopes, principally grass-lands, also backed by trees. The island lies **NW.** and **SE.**, is irregular in shape, about three-quarters of a mile long, and on its northeastern side is tolerably bold-to.

In the channel between Greening's Island and Gilpatrick's Point is found from seven to fourteen fathoms water.

Gilpatrick's Point. Gilpatrick's Point, the eastern point of entrance, is low, partly cleared, has one or two houses, lies about five-eighths of a mile to the westward of Northeast Harbor, and forms the western side of a small and shallow cove called **Gilpatrick's Cove**. It is tolerably bold-to. A little over a quarter of a mile to the northward is **Manchester Point**, also cleared and cultivated, with one or two houses near its southern end, and backed by thick woods. On its southern side makes in a small cove, dry at low water, called **Manchester Cove.**

Clarke's Point. Clarke's Point, the western point of entrance to Somes' Sound, lies opposite to Greening's Island, with a passage between them about a quarter of a mile wide. It is easily recognized by the large steamboat wharf on its southern end, on which is also built a lobster-packing house. Three-quarters of a mile above it is a shallow cove, called **Norwood's Cove**; and a little over half a mile above this is another, known as **Fernald's Cove.**

On the northern side of Fernald's Cove, and a mile and a quarter to the northward of Clarke's Point, is Fernald's Point, a long, smooth, grassy and nearly level piece of land, making out from the base of Flying Mountain. It is

Fernald's Point. entirely bare of trees, well cultivated, and has a house and barn. This point is nearly opposite to, but a little above, Manchester Point. Between the two the Sound is only about four hundred yards wide;—this portion being generally called **The Narrows.**

From Clarke's Point to Fernald's Point the western shores are diversified with woods and cleared lands, and are thinly settled around the bases of the mountains.

On the eastern side of the Sound, above Manchester Point, the shore-line is nearly straight for over two miles,—running in a N. by E. direction, with no indentation of importance. It is composed of steep, wooded slopes, with nearly level, cleared and cultivated fields between them, and is in most places very bold-to, especially at the base of Brown's Mountain.

The western shores above Fernald's Point are somewhat more regular than the eastern, and are very bold-to, especially at the base of Robinson's Mountain, where twenty-five fathoms water is found within one hundred yards of the shore.

Valley Cove. Five-eighths of a mile to the northward of Fernald's Point is a circular cove, called Valley Cove, with bold shores, and affording excellent anchorage in from two to eight fathoms, soft bottom.

Robinson's Mountain, not quite half a mile to the northward of Valley Cove, is high and very steep, almost entirely bare of trees, and presents precipitous rocky cliffs on its eastern side rising abruptly from the water. On its southern side there is a small brook, forming a cascade by its precipitous descent, convenient for ships to water. From the eastern

Robinson's Mountain. spur of this mountain the shore-line turns abruptly and runs in a N. by W. direction for a mile and a half, and is steep, rocky and uncultivated. The Sound gradually widens, until, at its head, it is three-quarters of a mile wide, and both shores are indented by coves. A mile and a half above Robinson's Mountain is a cove, with anchorage for small vessels, called **Broad Cove**; and about midway between the mountain and this cove will be seen the wharves, sheds and derricks of a granite quarry. Dwellings are few, and give evidence of the poverty of the soil by their wretched appearance. Above the quarry the shores are somewhat lower and entirely covered with a dense growth of young trees, embracing all varieties.

On the eastern shore of the Sound, when past the steep cliffs of Brown's Mountain, the banks are gently sloping and diversified with woods and cultivated fields.

Sargent's Point. Sargent's Point lies on this side, nearly opposite to but a little below Broad Cove. It is a long, gently sloping, wooded point, making to the northward from the northern base of Brown's Mountain. Behind it makes in a long shallow cove, called **Sargent's Cove**, off the entrance to which lie rocks and ledges, rendering the approaches to it unsafe.

Bar Island. When up with Broad Cove, there will be seen at the head of the Sound, and nearest to the western shore, an islet, thickly wooded with large trees, and presenting a round, bluff head on its southern side. This is Bar Island, lying in the entrance to Somes' Harbor, close in with the northern shore of the Sound, and half a mile above Broad Cove.

Somes' Harbor lies on the western side of Bar Island, between it and **Mason's Point**, which is low and also thickly wooded. The passage is only about one hundred and fifty yards wide, but has not less than three and a half fathoms. The village of **Somesville** occupies the western shore of the harbor, and is beautifully situated on undulating land, amidst great numbers of handsome trees. Its principal trade is in lumber and ship-building. The deep water and usual anchorage is close under the eastern shore, as the shoals extend from the western shore more than half the width of the harbor. From two to five fathoms, soft bottom, is found at mean low water. **Somes' Harbor.**

DANGERS

IN APPROACHING AND ENTERING SOMES' SOUND.

Vessels bound to Somesville by the main channel use the **Mount Desert Eastern Passage**, entering either on the northern or southern side of Bunker's Ledge. This passage is common to the approaches to Northeast and Southwest harbors, and the dangers in it have been fully described on pages 136–137 and 138–139.

When past Bear Island, however, (the course leading towards the middle of Greening's Island,) look out for Gilpatrick's Ledge, lying nearly two hundred yards from the shore, on the northern side of the entrance, and on the eastern side of the entrance to Gilpatrick's Cove. It is bare at low water and is not buoyed. When past it the course turns to the north-westward, (leading along the northern face of Greening's Island,) and the first danger met with is Middle Rock, lying off Manchester Point at a distance of an eighth of a mile. It is a detached rock, with thirteen feet at mean low water, and bears from the eastern extremity of Fernald's Point **S.**, a little over a quarter of a mile distant, and from the northern end of Greening's Island **N.**, five-eighths of a mile distant. It is not marked in any way, and is a very dangerous obstruction. In the absence of any local name we have given it the name of Middle Rock. There is good water (over three fathoms) on its western side, but this passage is not safe owing to the detached rock, called Fernald's Rock, lying in the mouth of Fernald's Cove, about two hundred yards from the shore and the same distance from Middle Rock. It is covered only at high tides, and is quite remarkable when out of water. There is no passage inside of it. ***Gilpatrick's Ledge.*** ***Middle Rock.*** ***Fernald's Rock.***

Above Manchester Point the eastern shore must not be approached nearer than four hundred yards until up with the steep slopes of Brown's Mountain, as this shore is somewhat shoal; but you may hug the western shore closely, as it is very bold-to. When up with Brown's Mountain both shores are bold, and so continue until past Sargent's Point. There are no obstructions or dangers of any kind until past Broad Cove and about to enter Somes' Harbor. Here look out for Bar Island Ledges, making off in a southerly direction from Bar Island for a quarter of a mile, and having five feet at low water on their southern end. This southern end is sometimes called **Myrtle Ledge**, and is marked by a red spar-buoy (No. 2) placed in three fathoms just to the southward of it. This ledge is easily avoided by keeping the western shore of the Sound aboard until up with Bar Island. After entering Somes' Harbor, bear in mind that the whole of the western cove is flat from **Somes' Point** to Mason's Point; and keep the eastern shore aboard to the anchorage. ***Bar Island Ledges.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING SOMES' SOUND.

I. ***From the Eastward, by the Mount Desert Eastern Passage, north of Bunker's Ledge.***—Keep the Mount Desert shore aboard until Bunker's Ledge Monument bears **W.**, distant one mile and a half, when steer **W.** by **N.** for Bear Island Light-house, carrying not less than ten fathoms water. On this course, when the Monument is in range with Baker's Island Light-house on a bearing of **S.** ¼ **E.**, you have passed Lewis' Rock and there is ten and a half fathoms, rocky bottom. Now steer **W.** until the eastern extremity of Sutton's Island bears **S.** ¼ **E.** and Bear Island Light-house **NW.** by **W.** ¼ **W.**, when you will have nine and a half fathoms, hard bottom, and must steer **W.** by **N.** ½ **N.**, about for the middle of Greening's Island. Continue this course (on which there will be not less than eight fathoms water) until Manchester Point bears **N.** by **W.** ½ **W.**, the southeastern point of Greening's Island **S.** ¼ **W.**, and the wharf in Gilpatrick's Cove **N.** by **E.** ¼ **E.** Here there will be nine fathoms water, and you may steer **NW.** ¾ **N.** until Clarke's Point opens to the westward of Greening's Island on a bearing of **SW.** ¾ **S.**, when the depth will be twelve fathoms, and the southern end of Gilpatrick's Point will bear **E.** by **S.** ¼ **S.** Now steer **N.** ¼ **E.** through The Narrows; after which keep the western shore rather best aboard until past the eastern spur of Robinson's Mountain. Leave this to the westward about a hundred yards off, and when past it the entrance to Somes' Harbor will bear due **N.**; and that course (always remembering to keep the eastern shore aboard) will lead safely into the

Sailing Directions--Somes' Sound.

harbor and up to the anchorage. On the above courses the least water is seven fathoms until up with Bar Island Ledges, and in many places there will be twenty fathoms.

In beating to windward there is nothing in the way after passing The Narrows, and it is only necessary to repeat the caution against the sudden squalls and flaws of wind, which are so dangerous in this vicinity.

These courses pass a little over three hundred and fifty yards to the northward of the northern end of Bunker's Ledge, and nearly three-eighths of a mile to the northward of the Monument; an eighth of a mile to the northward of Lewis' Rock; four hundred yards to the southward of Bowden's Ledge; three hundred and fifty yards to the southward of Long Pond Shoal; an eighth of a mile to the southward of Bear Island; four hundred yards to the southward of Gilpatrick's Ledge; about seventy-five yards to the eastward of Middle Rock; and the same distance to the westward of Bar Island Ledges.

II. ***To come through Mount Desert Eastern Passage, south of Bunker's Ledge, and enter Somes' Sound.***—From Schoodic Point steer **W.** ½ **S.**, which will lead, with not less than twelve fathoms, up to Bunker's Ledge. When the Monument is seen, shape the course to pass about three hundred and fifty yards to the southward of it; and when it bears **NE.** by **N.** ¾ **N.**, and Baker's Island Light-house is just open to the eastward of Little Cranberry Island on a bearing of **S.** by **E.**, there will be thirteen fathoms, rocky bottom, with Bear Island Light-house bearing **NW.** by **W.** ¾ **W.** Steer for the light, carrying not less than ten fathoms, until the eastern end of Sutton's Island bears **S.** ¾ **E.**, when there will be nine and a half fathoms, hard bottom; and you may steer **W.** by **N.** ½ **N.**, about for the middle of Greening's Island, carrying not less than eight fathoms. Continue this course until Manchester Point bears **N.** by **W.** ½ **W.**, the southeastern point of Greening's Island **S.** ¼ **W.**, and the wharf in Gilpatrick's Cove **N.** by **E.** ¼ **E.** There is now nine fathoms water, and you must steer **NW.** ¾ **N.**, following the directions given above.

III. ***To come from the Southward, or from Sea, and enter Somes' Sound.***—Bring Baker's Island Light-house to bear **N.** and run for it, but gradually edge to the eastward on approaching the island so as to pass half a mile to the eastward of it. When abreast of the light steer **N NW.**, which course will lead, with nothing less than fourteen fathoms, directly for Bunker's Ledge Monument. On this course, when Bear Island Light-house bears **NW.** by **W.** ¾ **W.**, and you are a quarter of a mile from the Monument, with fourteen fathoms, rocky bottom, steer for the light until the eastern end of Sutton's Island bears **S.** ¾ **E.**; when steer **W.** by **N.** ½ **N.**, following the directions previously given.

These courses pass four hundred yards to the eastward of Harding's Ledge, and a little over three hundred yards to the southward of Bunker's Ledge Monument.

At night, when Baker's Island Light-house is shut in behind Little Cranberry Island, Bunker's Ledge is to the eastward; or, when that light bears **S.** by **E.** ¼ **E.**, you are past the ledge.

IV. ***To come from the Westward, through Cranberry Island Passage, and enter Somes' Sound.***—A full description of this passage, and the dangers therein, will be found on pages 140–141 of the directions for Southwest Harbor. It is not necessary, therefore, to repeat it here.

When up with Long Island (which is off the entrance to Blue Hill Bay) give its southeastern point a berth to the westward of a mile and three-quarters and steer **N NE.**, heading for the southwestern point of Great Cranberry Island, and passing to the westward of the Duck Islands. On this course, when Baker's Island Light-house bears **E NE.**, distant four and a half miles, and you are abreast of the eastern end of Gott's Island, steer **N.** by **E.** for Flynn's Point. Continue this course until nearly abreast of the spindle on Bunker's Whore, when Bear Island Light-house will bear **NE.** by **N.** ½ **N.**, and you must steer for it, passing about midway between the red spindle on Bunker's Whore Ledge and the black buoy on Long Ledge, and carrying not less than six fathoms water. When abreast of the red buoy on Cranberry Island Ledge steer **NE.** by **E.** ¾ **E.**, carrying not less than four fathoms, and passing midway between this buoy and the black buoy on Flynn's Ledge. Continue this course for about an eighth of a mile, or until Flynn's Ledge buoy is a little abaft the beam, when there will be three and three-quarter fathoms, with Sea-Wall Point bearing **NW.** by **N.** ¾ **N.** Now steer **N.** by **E. Northerly**, which course leads across the Bar in not less than fourteen feet water, and past the entrance to Southwest Harbor. After crossing the Bar there is not less than four and a half fathoms; and you may continue the course past the eastern point of Greening's Island until Bear Island Light-house bears **E.** ¼ **N.** Then steer **NW.** ¾ **N.**, following the directions for the Sound, previously given.

The above courses pass a mile to the eastward of The Drums; a mile and an eighth to the eastward of Horse-Shoe-Ledge; one-third of a mile to the eastward of the buoy on Long Ledge; about four hundred yards to the westward of the spindle on Bunker's Whore Ledge; close to, to the westward of the buoy on Cranberry Island Ledge; close to, to the eastward of Flynn's Ledge; two hundred and fifty yards to the westward of High Head Shoal; a quarter of a mile to the westward of Cow Ledge; and a quarter of a mile to the westward of Gilpatrick's Ledge. *Sailing Directions--Somes' Sound.*

V. ***To enter Somes' Sound from Southwest Harbor, by the passage between Clarke's Point and Greening's Island.***—This passage, which is never used without a pilot, is a quarter of a mile wide at its narrowest part, and is crossed by a bar with fifteen feet water. It is obstructed—first, by *Greening's Ledge*, which is bare at extreme low tides, lies off the southern shore of Greening's Island, near its western end, and is marked by a red spar-buoy placed on its southern side; secondly, by *a detached rock, with one foot at mean low water*, lying off the eastern shore of Clarke's Point on the western side of the passage, about two hundred yards from shore, and not buoyed; and thirdly, by the *bar* extending from Greening's Island to Clarke's Point, having fifteen feet water. Vessels of light draught use this passage when bound from Southwest Harbor into Somes' Sound, but never without a pilot.

To enter Somes' Sound through this channel, pass midway between the red buoy on Greening's Ledge and the steamboat wharf, and steer **NE.** by **N.** $\frac{3}{4}$ **N.** for Manchester Point. Great care is necessary on this course to keep the Greening's Island shore aboard to avoid the dangerous one-foot rock off Clarke's Point,—the course leading pretty close to it. When within five hundred yards of Manchester Point, and the two wharves on the eastern shore, about a quarter of a mile above Gilpatrick's Point, bear **E.**, there will be nine fathoms, rocky bottom. Now steer **N.** $\frac{1}{4}$ **E.** towards Robinson's Mountain, and follow the directions for Somes' Sound. These courses lead across the bar in fifteen feet water.

LIGHT-HOUSES.

NAMES.	Latitude.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		m. s.	Feet.	
Mount Desert Light-house ..	43 58 7	68 7 42	4 32 30.8	Fixed.	----------	75	14
Baker's Island Light-house.	44 14 28	68 11 56	4 32 47.7	F. V. F.	1 30	105	15
Bear Island Light-house....	44 16 59	68 16 12	4 33 4.8	Fixed.	----------	97	15

TIDES.

Corrected Establishment at Southwest Harbor	$11^h\ 2^m$
Mean Rise and Fall of tides	10.0 ft.
Mean Rise and Fall of Spring tides	10.7 ft.
Mean Rise and Fall of Neap tides	9.2 ft.

VARIATION OF THE COMPASS.

The magnetic variation at Southwest Harbor for 1879 is **16° 0′ W.**, with an approximate annual increase of **2′** nearly.

BASS HARBOR.

From Sea-Wall Point the southern shore of Mount Desert Island has a general course **W SW.** for two and a half miles to Bass Harbor Head, the eastern point of entrance to Bass Harbor. This portion of the shore is very irregular in outline, has several small coves with shoal water, and is quite foul,—there being a great number of bare ledges and sunken rocks scattered along its face. Its general appearance is that of land of moderate height, covered with a thick growth of scrubby trees.

Of the several coves and indentations on this southern face there is only one worthy of mention, which is sometimes called **Locust Reach**, and sometimes Ship Harbor,—the latter name having been given to it from the circumstance of a large vessel running in there in a gale as a last resource. The entrance is through a narrow passage between two rocky heads with precipitous faces; but this rapidly widens into a large but shallow cove of somewhat irregular shape, and completely land-locked. This entrance is a mile and three-quarters to the westward of Sea-Wall Point (Flynn's Point) and three-quarters of a mile to the eastward of Bass Harbor Head. **Ship Harbor.**

Bass Harbor is formed by a long cove of irregular shape, about one mile and three-quarters long, penetrating the island at its southwestern extremity, and affording good anchorage in from two to seven fathoms, with good holding-ground. The upper portion of the cove is, however, almost all flats, bare at low water. The western point of entrance is called Bass

The Narrows. Harbor Point, and between it and the head the entrance is a little over one mile wide; but about five-eighths of a mile above this the harbor contracts to a width of four hundred yards, forming what is called The Narrows, joining the **Outer** and **Inner** harbors. A depth of three and a half fathoms can be taken through The Narrows, but above their northern end the channel rapidly shoals and diminishes in width to a mere thread.

Bass Harbor Head and Light-house. Bass Harbor Head is of moderate height, rocky and dotted with scrub. Viewed from the eastward it shows peculiar red rocks on its sea-face; and, about half way up on its surface, on the extreme southern point, is built the light-house, which is the guide to this harbor. This light-house is a brick tower, twenty-six feet high, whitewashed, and connected with a wooden dwelling of the same color. It shows a fixed red light, of the fifth order of Fresnel, from a height of fifty-six feet above the sea, visible thirteen miles. This light cannot be seen from any bearings to the eastward of **SE. by S.** Its geographical position is

Latitude ..... 44° 13′ 18″ N.
Longitude ..... 68° 20′ 14″ W.

Fog-signal. A bell is struck by hand during thick weather.

From Bass Harbor Head the course of the eastern shore of the harbor is about **N.**, for seven-eighths of a mile, to the entrance to The Narrows. The shores are mostly smooth, gently sloping, cleared and generally cultivated, but the fields are covered here and there with patches of alder bushes. The village of **Tremont** occupies both shores.

Bass Harbor Point. Bass Harbor Point, the western point of entrance, is a bare, rocky head, dotted with a few scrubby spruce and fir; and hence to Harbor Point (or Frye-House Point, as it is often called) the general course of the western shore is about **NE.**, although it curves first to the northward and then to the eastward, forming a large semicircular cove, in which there are from six feet to three fathoms.

Harbor Point. Harbor Point, or **Frye-House Point,** forms the western shore of The Narrows. It is low, rocky and bare, and terminates, at low water, in a long ledge, called **Harbor Point Ledge.** This is marked by a black buoy placed on its eastern end; and above this it is not safe to go with large vessels more than a few hundred yards. Vessels drawing six feet may, however, pass half a mile above Harbor Point.

Gott's Island. Gott's Island, or **Great Gott's Island,** as it is sometimes called, lies to the southward of Bass Harbor Head, at a distance of seven-eighths of a mile; and between it and the head runs a *bar, across which only fourteen feet can be carried at mean low water;* so that the passage between the two is not available for vessels of large draught except at high water. The island lies nearly **N.** and **S.**, is about three-quarters of a mile long, and, though partly cultivated, is in most places well wooded, with alternate sandy and rocky faces.

Close to Gott's Island, on its southwestern side, lies **Little Gott's Island,** which is also tolerably high and thickly wooded. About a mile and a half to the westward will be seen **Placentia Island,** easily recognized by the smooth, cleared and nearly level land at its northeastern end, backed by thick woods. Close to Little Gott's, and between it and Placentia, but to the southward of both, lies **Black Island,** which is high land, so densely wooded that the foliage has a black appearance—hence the name.

All of the islands above mentioned lie in the entrance to **Blue Hill Bay,** that great bay which washes the western shores of Mount Desert Island as Frenchman's Bay does the eastern shores. The entrance for large vessels bound to Bass Harbor from the eastward is through this bay, between Placentia and Burnt-Coat islands; but coasters always pass between Gott's Island and Bass Harbor Head. There is also a passage between Gott's Island and Placentia Island, and another between the latter and Black Island, but they are not recommended to strangers. As a general rule, if your draught be not over eighteen feet, it is best to wait near the bar until high water and enter that way.

DANGERS

IN APPROACHING AND ENTERING BASS HARBOR.

I. ***From the Eastward, crossing the bar between Gott's Island and Bass Harbor Head.***—Passing along the southern shore of Great Cranberry Island, when abreast of Race Point (which is the southwestern extremity of the island) look out first for Bunker's Whore Ledge, the red spindle on which will be seen to the northwestward about three-quarters of a mile off. This is a large detached ledge, with from six to ten fathoms all around it, and lies three-quarters of a mile **W.** by **S.** ½ **S.** from Race Point. It is bare at half-tide and very dangerous. The spindle is on the centre of the ledge, is surmounted by a cage, and must receive a berth of not less than an eighth of a mile. From Baker's Island Light-house it bears **W.** ½ **N.**, distant nearly three miles and three-quarters. (See page 140.)

Bunker's Whore Ledge.

When up with Bunker's Whore Ledge, a black can-buoy will be seen a little over half a mile to the westward. This is on Long Ledge, making off from the Mount Desert shore in a southeasterly direction for over half a mile. Two bare rocks, called **The Knubble,** rise from about the middle of this ledge, which is bare at low water to a distance of three-eighths of a mile from shore. The buoy is a can of the second class, marked No. 1, and placed in three fathoms water on the southeastern point,—the course leading to the southward of it.

Long Ledge.

There are no dangers between Long Ledge and Bass Harbor Bar, which extends from Bass Harbor Head to Gott's Island, and has fourteen feet at mean low water in the channel across it. The soundings are pretty regular,—varying from thirteen to sixteen feet over almost the entire length of the Bar;—but there are *one or two spots with twelve feet*, and a long ledge makes off from Gott's Island, along the western edge of the bar, for a little over half a mile, upon which there is as little as *eight feet water*. This contracts the channel across the bar, and compels vessels to keep Bass Harbor Head rather more aboard. ***Bass Harbor Bar.***

Gott's Island should not be approached on its northern side by any one not perfectly familiar with the shoals extending to the northward from it, which are many and dangerous. After crossing the Bar there are no more dangers until well past the head and steering up into the harbor, when look out for Weaver's Ledge, easily recognized by the two spar-buoys on its eastern and western ends. This is a detached ledge, dry at low water, lying a quarter of a mile **E SE.** from Bass Harbor Point and about sixteen hundred yards **NW. ¾ W.** from Bass Harbor Head Light-house. The shoal ground of the ledge is about two hundred yards square, with soundings over it varying from one to seventeen feet. There is equally good water on all sides, but the channel on its eastern side is the best,—being nearly half a mile wide, while that between the rock and Bass Harbor Point is only a quarter of a mile wide. On the eastern point of the ledge is placed a black spar-buoy in four fathoms water, marked No. 3, which is to be left to the westward by vessels using the eastern passage. On its western end is placed a red spar (No. 2) in three fathoms at low water, which is to be left to the eastward by those using the western passage. Those beating to windward in the vicinity of this ledge should give both of these buoys a berth to the southward or northward of not less than an eighth of a mile, as they do not mark the northern and southern limits of the shoal. ***Weaver's Ledge.***

Passing Weaver's Ledge, the course leads for The Narrows, and there are no obstructions in the channel,—it being only necessary to keep off the shores. The eastern shore is much the boldest, and may be approached usually within a hundred and fifty yards; but there are several ledges and outlying rocks off the western shore, the most dangerous of which are off Harbor Point.

Of these ledges the most important is Harbor Point Ledge, bare at low water, making off from Harbor Point to the southeastward nearly two hundred yards. It is marked by a black spar-buoy (No. 5) placed on its eastern end in three fathoms water, which must be left to the westward. All of this western shore in the vicinity of Harbor Point should be avoided; as, besides Harbor Point Ledge, there are *two very dangerous rocks* lying off the southern side of that point at distances of one hundred and one hundred and fifty yards, respectively. The inner one is awash; the outer has four feet at mean low water; and both rocks lie close together, between three hundred and fifty and four hundred yards to the southwestward of Harbor Point. They are not buoyed. ***Harbor Point Ledge.***

The channel is extremely narrow and crooked above Harbor Point Ledge, and should not be attempted without a pilot.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BASS HARBOR.

I. ***From the Eastward, crossing the bar between Gott's Island and Bass Harbor Head.***— Bring Baker's Island Light-house to bear **N.**, a mile and a quarter distant, and steer **W.** by **N. ¼ N.**, which will lead safely across Bass Harbor Bar in not less than fourteen feet water. When over the Bar and Bass Harbor Head Light-house bears **NE. ½ N.**, steer **N.** by **W.**, keeping the eastern shore best aboard, and carrying not less than six fathoms water. Vessels of large draught may anchor anywhere on this course after passing Weaver's Ledge; but, *wishing to proceed into the Inner Harbor*, when the southern extremity of Bass Harbor Point bears **W.** by **S. ¾ S.** steer **NE.** by **N. ¾ N.**, through The Narrows, until past the black spar-buoy on Harbor Point Ledge and abreast of the long wharf on the eastern shore of The Narrows, in four fathoms. Now steer **N NW.** Westerly for about three hundred yards, and anchor in nineteen feet, soft bottom, off the wharves. It is not safe for strangers to go above this.

The above courses pass one-third of a mile to the southward of Bunker's Whore Ledge; about six hundred yards to the southward of Long Ledge; one hundred and fifty yards to the northward of the shoals off Gott's Island; about five hundred yards to the eastward of Weaver's Ledge; and about seventy-five yards to the eastward of Harbor Point Ledge. This passage is the one commonly used by coasters, except such as are of large draught; and by these frequently at high water.

DANGERS

IN APPROACHING AND ENTERING BASS HARBOR.

II. ***From the Eastward, by the passage between Placentia and Burnt-Coat islands.***—This passage is much obstructed by dangerous ledges and bare rocks lying between Long Island and the group formed by Gott's, Black and Placentia islands. Of these the first met with, after passing the Duck Islands, is marked by a black spar-buoy, and is known as The Drums. It is bare at three-quarters ebb, covers an area of about a quarter of a mile square, and, being directly in the track of vessels bound into Blue Hill Bay from the eastward, is extremely dangerous. The buoy, which is marked No. 5, is placed in five fathoms about fifty yards to the southward of the ledge, and the course passes to the westward of it. The buoy on The Drums bears from

The Drums.

	Miles.
Baker's Island Light-house, SW. by W.	7 ½
Southern end of Great Duck Island, W. by N. ⅝ N.	2 ¾
Mount Desert Rock Light-house, N NW. ——— **a little over**	13

From this buoy

	Miles.
Southeastern end of Long Island bears SW. ⅝ S.	2 ⅛
Middle of Black Island N NW.	2
Staples' Point (southeastern end of Burnt-Coat) NW. by W. ½ W.	3 ¼

Horse-Shoe Ledge. Seven-eighths of a mile **N.** by **E.** ½ **E.** from The Drums is another dangerous ledge, called Horse-Shoe Ledge, lying **N NE.** and **S SW.**, and about three-eighths of a mile long. It has six feet at low water and is not buoyed; but should be, as the channel between it and The Drums, which has from fourteen to nineteen fathoms, and that between it and Black Island, which is nearly as deep, would be rendered perfectly safe. This will be recommended.

When past these ledges there are no hidden dangers;—it being only necessary to keep clear of the islets and dry rocks until you approach Burnt-Coat Island, when you must beware of Staples' Ledge, lying off **Staples' Point**, (on the eastern side of the island.) It is bare at lowest tides, lies an eighth of a mile **SE.** from the point, and is marked by a black spar-buoy placed on its eastern side in three fathoms. (*This buoy is not in the official Buoy-List.*) The ledge is easily avoided by keeping the middle of the passage. When past it, there are no dangers until up with Weaver's Ledge, in the entrance to the harbor. (See preceding page.)

Staples' Ledge.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BASS HARBOR.

II. ***From the Eastward, by the passage between Placentia and Burnt-Coat islands.***—This passage, though rarely used by vessels bound to Bass Harbor, has very deep water, and is suitable for vessels of the largest draught. Wishing to enter by it, when about five miles and a quarter due **S.** from Baker's Island Light-house steer **W.** by **S.**, leaving the Duck Islands to the northward and heading nearly for the southern end of Long Island. When past Great Duck Island the entrance to Blue Hill Bay will be open. When the southeastern point of Burnt-Coat bears **NW.** ½ **W.** steer that course, paseing half a mile to the westward of The Drums, to the westward of Black and Placentia islands, and to the eastward of Burnt-Coat Island. When past Placentia Island, Bass Harbor Light-house will open to the eastward, and you must bring it to bear **NE.** by **E.** ½ **E.** and steer for it, carrying not less than eight fathoms. Continue this course until within a quarter of a mile of the light-house, in seven and a half fathoms, soft bottom, when the middle of Harbor Point will bear about **N.** by **W.** Now steer that course until Bass Harbor Point bears **W.** by **S.** ¼ **S.**, when there will be six and a half fathoms, and you may anchor, or follow the directions for the Inner Harbor.

Or, you may, when about a mile and a quarter due **S.** from Baker's Island Light-house, in fifteen fathoms, steer **SW.** by **W.** ½ **W.**, nearly for the middle of Long Island;—thus passing to the northward of the Duck Islands in not less than nine fathoms. Continue this course, passing a quarter of a mile to the southward of the buoy on The Drums, and when the middle of Black Island bears **N.** by **W.**, steer **NW.** ½ **W.** towards the southeastern point of Burnt-Coat Island and follow the directions given above.

III. ***To come from the Westward and enter Bass Harbor.***—There are various passages leading along the coast from Penobscot Bay to Mount Desert, most of which are in common use by coasters. Of these the most important are **Eggemoggin Reach**, leading between Deer Isle and the mainland; **Deer Island Thoroughfare**, leading along the southern shore of Deer Isle, between that island and the numerous islets studding the space between it and Isle au Haut; and **Merchant's Row**, leading between Merchant's and McGlathery's islands,—only used when the Thoroughfare is frozen. Of these, the first two are comparatively safe and have good water; but as they are somewhat intricate, and there are at present no charts, it is perhaps not advisable for strangers to use them. Merchant's Row ought not to be passed without a pilot. *Sailing Directions--Bass Harbor.*

Vessels having come through Eggemoggin Reach are accustomed, on leaving it, to pass between Mahoney's Island (lying off Naskeag Point) and Calf Island, leaving the latter to the southeastward and the former to the northwestward; to round Pond Island, leaving it to the southward, and steer over towards the Mount Desert shore, leaving Ship Island to the northward and the spindle on **The Barges** to the southward. This spindle is of iron, thirty feet high, painted red, and has a cask on top. There is good water in this passage,—there being from six to nine fathoms between Ship Island and The Barges. When about midway between the island and the spindle, in nine fathoms water, Bass Harbor Head Light-house will bear **E SE.**, and that course leads up to the eastern entrance to the harbor with not less than fifteen fathoms. When up with the entrance, with the eastern extremity of Bass Harbor Point bearing **N.** by **E.** $\frac{1}{4}$ **E.**, and you are in about thirteen fathoms and nearly four hundred yards from the point, steer **NE.** by **E.**, carrying not less than six fathoms, until the southern extremity of Bass Harbor Point bears **W.** by **S.** $\frac{1}{4}$ **S.**, or Bass Harbor Head Light-house bears **SE.** by **S.** $\frac{1}{4}$ **S.**; when steer **NE.** by **N.** $\frac{1}{4}$ **N.**, following the directions given for the Inner Harbor.

These courses pass one hundred and fifty yards to the northward of the red buoy on the western side of Weaver's Ledge.

Vessels having come through Deer Island Thoroughfare either use the passage just described, or go through Casco Passage or York Narrows; but the latter cannot be attempted by strangers. Having come through York Narrows, however, steer **E.**, which course leads up to Bass Harbor Entrance, when you may enter by either the eastern or western passage. *If by the former*, when the eastern extremity of Bass Harbor Point bears **NE.** $\frac{1}{4}$ **E.** and Bass Harbor Head Light-house **E.** $\frac{1}{4}$ **N.**, distant two miles, and you are in twenty-one fathoms, soft bottom, steer **NE.** by **E.**, which will lead through the eastern passage with not less than six fathoms. Continue it until Bass Harbor Point bears **W.** by **S.** $\frac{1}{4}$ **S.** and the light-house **SE.** by **S.** $\frac{1}{4}$ **S.**, when anchor in six and a half fathoms; or steer **NE.** by **N.** $\frac{1}{4}$ **N.** through The Narrows, following the directions for the Inner Harbor.

These courses pass one hundred and fifty yards to the northward of Weaver's Ledge.

Desiring to enter by the western passage, continue the **E.** course until within about six hundred yards of the light-house; when you will be in six fathoms, with the light bearing **NE.** $\frac{1}{2}$ **N.** Now steer **N.** by **W.**, as directed for this passage, (see preceding page,) carrying not less than six fathoms water, and anchor when the southern extremity of Bass Harbor Point bears **W.** by **S.** $\frac{1}{4}$ **S.**; or steer **NE.** by **N.** $\frac{1}{4}$ **N.** into the Inner Harbor.

IV. ***To come clear outside of everything, and enter Bass Harbor from the Westward.***—From off Matinicus Rock steer **NE.** by **E.** $\frac{1}{2}$ **E.**, which will bring you up with Long Island, off Blue Hill Bay. Pass to the southward of this, and when past it you will open the entrance to Blue Hill Bay, between Burnt-Coat Island on the west and Black and Placentia islands on the east. Bring the middle of this entrance to bear **N NW.**, and steer that course until Bass Harbor Light-house opens to the northward of Placentia Island. Bring it to bear **NE.** by **E.** $\frac{1}{2}$ **E.** and steer for it, carrying not less than eight fathoms. When within a quarter of a mile of the light, in seven and a half fathoms, soft bottom, the middle of Harbor Point will bear about **N.** by **W.**, and you may steer that course until Bass Harbor Point bears **W.** by **S.** $\frac{1}{4}$ **S.**, when anchor in six and a half fathoms; or you may follow the directions for the Inner Harbor.

The above courses pass a mile and a quarter to the westward of The Drums, and five hundred yards to the eastward of Weaver's Ledge.

LIGHT-HOUSE.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Bass Harbor Head Light-house	44 13 18	68 20 14	4 33 20.9	Fixed red.	56	13

TIDES.

Corrected Establishment at Southwest Harbor	$11^h\ 2^m$
Mean Rise and Fall of tides at Bass Harbor	10.1 ft.
Mean Rise and Fall of Spring tides	10.8 ft.

VARIATION OF THE COMPASS.

The magnetic variation at Bass Harbor is, for 1879, 15° 48′ W., with an approximate annual increase of 2′.

BLUE HILL BAY,

properly so called, is the fifth of the great bays (counting from the eastward) penetrating the coast of Maine, and is fifteen miles long, with an average width of about six miles. Its entrance is between Bass Harbor Head on the east and Naskeag Point (the northern point of the eastern entrance to Eggemoggin Reach) on the west. It is bounded on the east by Mount Desert Island, and on the west by the mainland of Brooklin and Blue Hill. The name of this bay is derived from **Blue Hill**, an isolated peak, standing about a mile and a half back from the shore at its northwestern end, and easily recognized, when seen from the southward, as a round, smooth mountain of very regular shape, with bold head, and slopes dotted here and there with trees. There is also a slight fringe of dark woods following the outlines of the mountain. The name Blue Hill Bay has been given to but a small portion of this great arm of the sea, viz: to so much of its western part as lies between the mainland of Brooklin and Blue Hill on the west and Long and Tinker's islands on the east; while to an arm making to the northward, on the eastern side of the bay, at its head, has been given the name of **Union River Bay.** To the southern and eastern portion (that lying along the shore of Mount Desert below Hardwood and Tinker's islands) the name **Placentia Bay** has been applied; but geographically the name Blue Hill Bay belongs to the whole body of water between the mainland and Mount Desert Island, with the exception of Union River Bay, which should properly be called **Union River**, as it is nothing but a widening of that stream as it approaches its mouth, and is in no place more than a mile and a quarter wide.

Blue Hill Bay is connected with Frenchman's Bay by a shallow strait called **Trenton River**, (see also page 132,) skirting the northern shore of Mount Desert Island, separating it from the mainland. It is crossed by a bridge, at Thompson's Island, about midway of its length; and navigation, except at high water, is closed by a bar dry at low water.

Blue Hill Bay is full of islands and a great number lie off its mouth, thus dividing the entrance into numerous channels. Of these islands, beginning at the eastward, the most important are the Duck Islands, Gott's Islands, Black, Placentia, Long, Burnt-Coat or Swan, Marshall's, Orono, Black—2d, Calf, John's, Pond and Mahoney's islands. There are many others studding the spaces between the larger islands, but they are small and of little importance.

Duck Islands. The Duck Islands are two in number,—**Great** and **Little Duck.** The latter lies three miles and a half to the southward of Cranberry Island, is nearly round, about half a mile in diameter, rocky, and for the most part well wooded. Great Duck Island lies about three-quarters of a mile to the southward of Little Duck. It is extremely narrow,—being one mile long, and having an average width of about a quarter of mile. It lies nearly **NNE.** and **SSW.**, is of moderate height, and is particularly noticeable when viewed from the northward and westward for a peculiar looking open space in the centre;—the appearance being caused by a clearing which crosses the island at this point, while the rest of it is thickly wooded.

Gott's Islands. Gott's Islands, already described, (page 146,) are also two, called **Great** and **Little Gott's.** The former lies three miles to the northwestward of Little Duck Island and about seven-eighths of a mile to the southward of Bass Harbor Head, the southwestern extremity of Mount Desert Island. It lies nearly **N.** and **S.**, is about three-quarters of a mile long, partly cultivated, but in most places well wooded, with alternate sandy and rocky faces. Close to it, on its southwestern side, lies Little Gott's Island, also of moderate height and thickly wooded. There is one house and a small clearing on the southern side of this island.

Black Island. Black Island lies nearly four miles to the westward of Little Duck Island and a quarter of a mile **S.** from Little Gott's Island, extends nearly **N.** and **S.**, is about one mile long, thickly wooded, and somewhat higher than the other islands. The name is derived from the density of the woods, which look black when viewed from a distance. This island must not be confounded with the Black Island which lies off the northern shore of Burnt-Coat, in the channel known as Casco Passage.

About three-quarters of a mile to the northwestward of Black Island lies Placentia Island, which has given the name to the eastern portion of the bay. This island lies nearly **NE.** and **SW.**, is about three-quarters of a mile long, and, as a rule, is quite bold-to. From Bass Harbor Head it is distant about one mile and a half. There is a good channel between it and Black Island, but it is not recommended for strangers. On the northwestern side of Placentia are seen gently sloping cleared fields, backed by very peculiar looking, bare, white ledges, rising to the wooded summit. These ledges are very noticeable, and will enable any one passing on the northern side of the island to recognize it. The northeastern point shows smooth, cleared and nearly level land, backed by woods, while on the southern side are mostly thick woods. **Placentia Island.**

The eastern and main entrance to Blue Hill Bay lies between Black and Placentia islands on the north and Long and Burnt-Coat islands on the west and south. Burnt-Coat Island is the largest of the group lying in the entrance to the bay, and is very irregular in shape, but its average length may be taken at four miles and its width at two and three-quarters. From Black Island it is distant about two miles in a westerly direction; from Naskeag Point about three miles and a half in a southeasterly direction; from Bass Harbor Head about four miles in a southwesterly direction; and from Isle au Haut (southern end) about twelve miles in a northeasterly direction. This island was formerly called **Swan Island,** but is now almost universally known as Burnt-Coat. Its shores, especially the northern, western and southern shores, are much cut up by coves, most of which afford good anchorage;—the two most important being Mackerel Cove on the northern, and Burnt-Coat Harbor on the southern shore. **Burnt-Coat Island.**

The northeastern point of Burnt-Coat Island is called Cranberry Marsh Point, and shows as a long, low, wooded point, with sandy beach. A rocky, wooded head, looking like an island, juts out from this low land about half a mile to the southward of the point, and between these there is nothing but the low beach, over which the houses in Mackerel Cove are visible. **Cranberry Marsh Point.**

Mackerel Cove lies between Cranberry Marsh Point and the northwestern point of the island, which is called **Burnt Point.** It is large and roomy, and its shores are of moderate height and well wooded, except at its head, where there is some cleared and cultivated land on the eastern shore. There is a small settlement here, and the harbor is used by coasters and others who are well acquainted, when overtaken by a gale or thick weather, after passing through Deer Island Thoroughfare. **Mackerel Cove.**

There are but few dangers in the approaches to Mackerel Cove, and they are easily avoided. Of these may be mentioned *Cranberry Marsh Ledge*, lying off the point of that name at a distance of about two hundred and fifty yards, with only two feet upon it at lowest tides, and not buoyed. On the western side of the approach, about half a mile **W.** by **N.** from Cranberry Marsh Point, lies a small, low, rocky islet, with a growth of spruce exactly in the middle. This is **Crow Island**; and **SE.** ½ **E.** from it, about three hundred and fifty yards distant, lies a ledge, bare at half-tide, called *Crow Island Ledge*. It is not buoyed, and sunken rocks extend off from it to the southeastward; so it must receive a good berth. These are all the dangers in the entrance to the cove; but there is *a large bare rock*, about fifteen feet high, lying on the southwestern side of the harbor, near its head. **Dangers in Mackerel Cove.**

Six hundred yards **W.** by **N.** ½ **N.** from Crow Island lie **The Triangles,** three small bare rocks joined at low water by ledges. They cover an area about one hundred and fifty yards in diameter; and are not safe to approach on account of outlying ledges, several of which are bare at low water.

A quarter of a mile **SW.** by **W.** from The Triangles lies **Round Island,** about two hundred yards in diameter. It is low and covered with fir and spruce, and is about four hundred yards from the Burnt-Coat shore.

Nearly due **N.** from Round Island, three-quarters of a mile off, and about four hundred yards to the northwestward of The Triangles, lies **Phinney's Island,** low, flat, rocky, and bare of trees except at its northern and southern ends, where there are one or two. There are really two islands lying **N NE.** and **S SW.** from each other and joined at low water, covering an area about three-eighths of a mile long by two hundred yards wide. About a quarter of a mile to the westward is Orono Island; and to the southward of this, in the mouth of a shallow cove on the northern side of Burnt-Coat Island, lie the **Garden Islands,** which appear to form part of the main shore.

To enter Mackerel Cove from the eastward, give Cranberry Marsh Point a berth of about four hundred yards to avoid Cranberry Marsh Ledge; and when past it bring the high hill on the southwestern side of the cove to bear **SW.** by **S.** and run for it. When past Crow Island Ledge, steer for the houses in the settlement and anchor at pleasure. There is plenty of water here for coasting-vessels of fifteen feet draught. Coming from the westward and wishing to enter the cove, you may pass either through the Casco Passage or York Narrowe, (giving Cranberry Island a berth of about three hundred yards,) and run for the houses in the head of the cove,—anchoring as before. It is proper here to remark that a strong current sets constantly to the eastward, near Cranberry Marsh Point, at all stages of the tide except the first of the flood. **Directions for entering Mackerel Cove.**

York Narrows and the **Casco Passage** lead along the northern shore of Burnt-Coat Island,—the former between Burnt-Coat and Orono islands, and the latter between Orono and Black islands. Both will be described in place.

The western side of Burnt-Coat Island presents rocky and wooded shores, with occasional cleared lands. There are several large coves on this side, but only one of importance, which is at the southwestern end, and is called Burnt-Coat Harbor. This harbor, together with the islands guarding its approaches, will be found fully described in place. **Burnt-Coat Harbor.**

Buckle's Island Harbor. The most northerly of the coves on the western side of Burnt-Coat Island is called Buckle's Island Harbor, and is contained between Burnt Point on the northeast and **Valentine Point** on the southwest. The harbor is formed by the curve of the shore between these two points and by **Buckle's Island,** a low, thickly wooded islet lying off the mouth of the cove, about a third of a mile to the westward of Burnt Point. Here is good anchorage for coasters, as there is nothing in the way; and you may stand fearlessly in, only using the lead, (if at high water,) so as not to run too far up, where vessels would lie aground at low tides.

Seal Cove. **Seal Cove Head,** or **Irish Point,** as it is sometimes called, is high and rocky, and covered with a sparse growth of spruce and fir. On its northwestern side makes in Seal Cove, large, but of little importance, and rarely used. It is just to the northward of Burnt-Coat Harbor, and vessels prefer to enter the latter for an anchorage; or, if to the northward, to make Mackerel Cove. At the head of this cove are two smaller ones, called **Toothaker's Cove** and **Sand Cove.** Seal Cove is about a mile in diameter. It must not be confounded with the southwestern part of Buckle's Island Harbor, which is sometimes, though erroneously, called by the same name.

Of the islands lying in Blue Hill Bay, just to the northward of Burnt-Coat Island, may be mentioned, first, Orono Island, lying close in with the northern shore of Burnt-Coat, on the southern side of the Casco Passage and on the

Orono Island. northern side of York Narrows, and thickly wooded,—its northern end extending into a low, rocky point, with two or three trees. When viewed from the westward it shows as a wooded island, highest at its southern end, which is a bare, bluff, rocky head, with white face, and a few trees clinging to its precipitous sides. Its **Little Thrumbcap,** the low, rocky point above mentioned, looks like a separate island.

Black Island. Black Island lies on the northern side of the Casco Passage, about half a mile to the northward of Orono. It lies **NW.** and **SE.,** is a little over half a mile long, and triangular in shape,—the narrowest part being at its eastern end. It is low, rocky and thickly wooded.

Calf Island. Calf Island, lying to the northwestward of Black Island, about a quarter of a mile distant, is somewhat higher than the latter; and part of its southern face is cleared, with a house and out-buildings upon it. Low, thick woods, mostly spruce, occupy the higher lands. The island lies nearly **N.** and **S.,** is about three-quarters of a mile long, and is joined to Black Island at low water.

Next to the westward of Calf Island, and about four hundred yards from it, lies **John's Island,** a low islet, covered with a thick growth of stunted spruce and fir except at its eastern and western ends, which are low, rocky and bare.

Pond Island. Pond Island lies about one mile to the northward of Black Island and a quarter of a mile from Calf Island, with which it is connected at low water. It is nearly circular in shape, and about three-quarters of a mile in diameter. On the southern side it shows cleared and gently sloping fields backed by woods. The middle is low, mostly cleared, but has some scrub growth; while the northeastern end terminates in a round head covered with a very thick growth of trees, and presenting a sufficiently remarkable appearance.

Eagle Island. Eagle Island lies between Pond and Black islands, and is low, rocky and wooded,—the rocks having a whitish appearance. Close to it, to the westward, lies a low, bare, rocky islet, called **Sheep Island.** It will seem part of Pond Island on passing to the southward of it, but is identified by a huge boulder on its western end, which, at a distance, looks like a large house.

The Ship and Barges. The Ship and Barges, or **Ship Island** and **The Barges,** are a group of islets and rocks lying to the eastward of Pond Island and on the western side of the main entrance to Blue Hill Bay. Their average distance from Pond Island is about one mile, and from the Mount Desert shore about a mile and three-quarters. There is good water among these islands, and they may be passed on either hand; but the main channel leads to the eastward. This group is easily recognized by the iron spindle placed on the northernmost of The Barges, which is bare at half-tide.

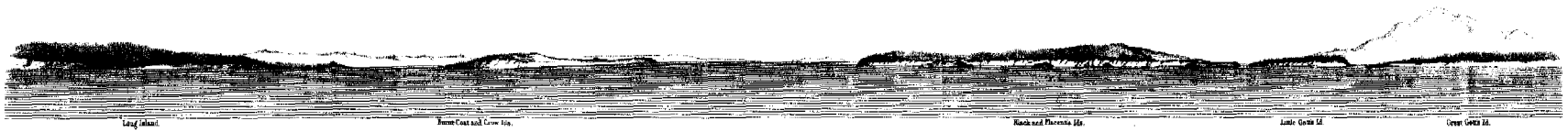
Ship Island is about three hundred yards in diameter, and is low and bare except on its northwestern side, where there are one or two trees. At low water it is joined by a very narrow bar to **Trumpet Island,** three-eighths of a mile to the northward of it. This latter is about a quarter of a mile long **N.** and **S.,** and is low, flat and grassy except near the middle, where there are a few trees. A small house is seen on its northwestern end. From Trumpet Island to Bar Island the distance is three-quarters of a mile.

The **Eastern Shores of Blue Hill Bay** extend for a mile and a quarter from Bass Harbor Point (the western point of entrance to Bass Harbor) to Black Cove, a long but shallow indentation on the western side of Mount

Black Cove. Desert Island, but of no importance. Anchorage for light-draught vessels may be found in its mouth in from six to twelve feet; but the cove is dry at low water for more than half its length. There are dangerous ledges along the shore between this and Bass Harbor, and it is not safe for strangers to approach nearer than four hundred yards, as none of the ledges are buoyed.

Half a mile to the northward of Black Cove lies Goose Cove, extending in a **NE.** and **SW.** direction into the western shore of Mount Desert, with from six feet to six fathoms, and unobstructed except by a *twelve-feet rock* on the southern side of the

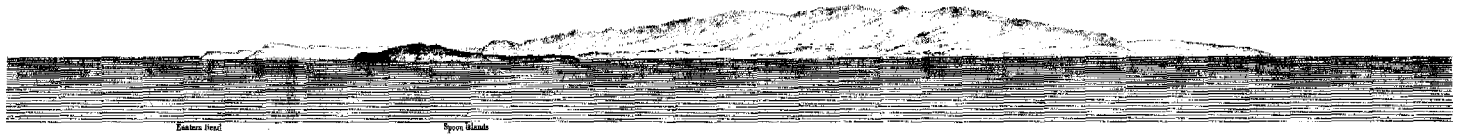
Goose Cove. entrance. The water shoals gradually, so that the lead will be a sufficient guide to the anchorage. The cove has an average width of a little over six hundred yards, and affords excellent and secure shelter. The shores of both this and Seal Cove are of moderate height, mostly wooded, but with cleared fields here and there; and there is a small settlement at each place. From Goose Cove to the western entrance to Trenton River is a little over five miles. The shores are diversified with cleared and wooded slopes, and in some places pretty well settled.



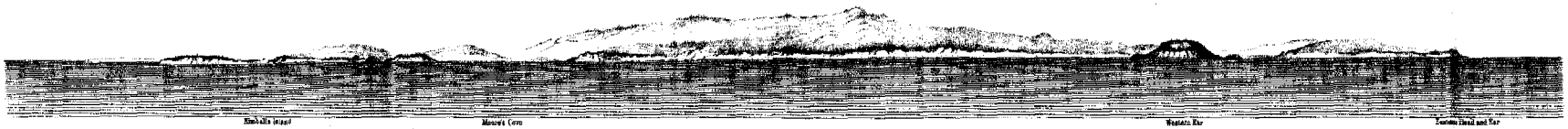
Entrance to Blue Hill Bay from the Eastward, the Southern end of Long Island bearing W. distant 24 Miles.



Entrance to Burnt-Coat Harbor from the Southward and Westward, the Lights in range on a bearing of N.E.¾ N. distant 14 Miles.



Isle au Haut from the Eastward, Eastern Head bearing W. by S. distant 6¾ Miles.



Isle au Haut from the Westward, Eastern Head bearing E. by N. distant 4¾ Miles.

About a mile and a half above Goose Cove lies Seal Cove, one of the best anchorages on this shore of the bay. It is a large cove, of irregular shape, lying nearly **E.** and **W.**, and is about three-quarters of a mile long and five-eighths of a mile wide at the usual anchorage; but it contracts to a small stream at its head, where it is connected with a large lake called **Seal Cove Pond.** There are some rocks lying near the shores, for the most part out at low water; but the main entrance is unobstructed. Good anchorage is always to be found here, and the shores are pretty thickly settled. **Seal Cove.**

Just to the northward of Seal Cove lies a cleared island of moderate height, with somewhat steep shores, and joined at low water to the mainland of Mount Desert. It lies nearly **N.** and **S.**, and is about half a mile long. It is partly under cultivation, and its eastern shore has a thin fringe of trees.

In the middle of the western entrance to Trenton River, and about two miles above Seal Cove, lies Hardwood Island, about three-quarters of a mile to the southwestward of Bartlett's Island, and about a mile and a quarter to the eastward of the southeastern end of Long Island. It extends **N NE.** and **S SW.**, and is about a mile long, of moderate height, its southern end bare, but its northern end fringed with trees. The water is deep on both sides. **Hardwood Island.**

Bartlett's Island is large, of moderate height, and wooded with a scrubby growth except on its northern side, where is a thick growth of oak, birch, and other trees. It is thinly settled on the western shore, but on the eastern side there are many houses. The island lies about **N NE.** and **S SW.**, and is three miles and a half long. The passage between it and Mount Desert Island has good water; but it is not fit for strangers. **Bartlett's Island.**

Trenton River, as before mentioned, (see page 132,) connects Blue Hill and Frenchman's bays, and is entirely unfit for the use of strangers. It is very shoal, and requires the assistance of a pilot for its navigation.

Oak Point, the northern point of the western entrance to Trenton River, is also the eastern point of entrance to Union River Bay. It is low and dotted with clumps of trees, and is about a mile to the northward of Bartlett's Island, between which and this point lies the principal entrance to Trenton River. **Oak Point.**

The **Western Shores of Blue Hill Bay** extend to the northward from Naskeag Point, which is the western point of entrance to the bay proper, and is the southern extremity of the peninsula of **Brooklin** as well as the eastern point of entrance to Eggemoggin Reach. It is high, smooth and gently sloping, bare of trees except on the summit, (where there is a small growth of stunted spruce,) and has a number of houses on its eastern end. Many small islands lie off this point, in Eggemoggin Reach and in the western entrance to Blue Hill Bay. Of those in the reach the most important are White Island, Hog Island and Harbor Island. **Naskeag Point.**

White Island is low and thickly wooded, with here and there a grassy spot, and lies nearly in the middle of the entrance. **Hog Island** is remarkable for the high, bold, bare, white, rocky head on its southwestern end, called **Devil's Head.** **Harbor Island** lies close in with the shore of Naskeag Point, and is low and thickly wooded.

Between Harbor Island and Naskeag Point there is a good anchorage for vessels of light draught, called **Naskeag Harbor.**

Mahoney's Island, lying in the middle of the western entrance to Blue Hill Bay and about three-quarters of a mile to the southward and eastward of Naskeag Point, is a small, low islet, about three hundred and fifty yards long **N NW.** and **S SE.**, and is dotted here and there with scrubby trees, but otherwise bare. It is usual to pass to the westward of it, though there is a wide and good passage between it and John's Island. **Mahoney's Island.**

Smutty Nose Island lies on the western side of the channel leading between it and Mahoney's Island, and is simply a bare, rocky islet, destitute of trees. It is nearly three-eighths of a mile to the northwestward of Mahoney's Island, with a passage between them with not less than four fathoms.

Passing up Blue Hill Bay by the western passage you will pass to the westward of the group of islands, (before described,) composed of Black, Calf, John's and Pond islands. **Black Island** will appear thickly covered with woods, as will also **Calf Island**; while **John's Island** will show on its western end a bare, rocky shore, backed by stunted spruce and fir. **Pond Island** will appear of moderate height, thickly wooded at its southeastern end, and showing a large grove of tall trees in the middle; while its western end will appear bare of trees and dotted with houses. The little green islet to the northeastward is **Lamp Island,** and is joined at low water to Pond Island.

The most prominent object in coming in by this channel is Eggemoggin Light-house, on **Green Island,** a low, bare, rocky islet but a little above sea-level, lying close in with the western shore of the bay, about a mile and a half above Naskeag Point. It will be seen off the end of Flye Island, of which it will appear a part. The light-house is a round, white tower, twenty-two feet high, connected with a brown dwelling; and shows a fixed white light, of the fifth order of Fresnel, from a height of twenty-six feet above the sea, visible nine miles. It is the guide to Blue Hill and Ellsworth. The geographical position is **Eggemoggin Light-house.**

Latitude	44° 14′ 54″ N.
Longitude	68° 29′ 52″ W.

Flye Island is very low and sandy, and is scarcely elevated above high water. It has one house upon it, and two or three lone trees at long intervals. Both this and Green Island lie in the mouth and on the northern side of Herrick's Bay, which makes in to the northwestward a little over a mile above Naskeag Point. **Flye Point** forms the northern point of entrance to this bay, and is high, grassy and gently sloping, with several houses on its eastern face. There is no passage between it and Flye Island. Herrick's Bay affords anchorage for vessels bound through Eggemog- **Herrick's Bay.**

gin Reach or to the eastward, when caught by foul winds or head tides. It is about two miles long and has an average width of half a mile; but the channel is narrow and its shores are foul. Its banks are of moderate height, steep and partly wooded, but in most places bare of trees. At its head there is quite a settlement, as the village of **Brooklin** occupies the neck of land between it and Eggemoggin Reach. This bay is not recommended to strangers unless in case of necessity; but there are no directions needed for entering it except to keep the middle of the passage.

Channel Rock. Before coming up with Eggemoggin Light-house you will pass to the eastward of Channel Rock, a high, round rock, lying between Pond and Tinker's islands, forming one of the chain of rocks and islands extending from Burnt-Coat Island to the head of the bay.

Sand Island. Sand Island, a low sand-spit, about six hundred yards to the northeastward of the light-house on Green Island, may be passed on either hand; but it is usual to pass to the eastward of it.

Tinker's Island. Tinker's Island is the large island lying about two miles to the northward of Pond Island, nearly in the middle of the bay, and separating the eastern from the western channel to Blue Hill. It will appear as a large island of moderate height, gently sloping, bare at both ends and thickly wooded in the middle, and is about a mile and three-quarters long in a **NE.** and **SW.** direction. To the southward of it, about a quarter of a mile, lies **Bar Island**, a small, low islet, marking the northern side of a wide but not very deep passage between it and Trumpet Island. Through this passage about sixteen feet may be carried, but the channel is narrow,—long shoals extending off from Bar Island more than half the way across.

Herriman's Point. From Flye Point the course of the western shore is nearly **N.** for about two miles and a half to Herriman's Point, the western point of that portion of the bay locally called Blue Hill Bay, and leading up between the mainland and Long Island to the settlement of Blue Hill. This point is long, quite low, and fringed with a tolerably thick growth of trees. Behind it the land rises to a moderate height, gently sloping, and diversified with woods and cultivated lands. It is easily recognized in coming from the southward; as the shore between it and Flye Point is mostly cleared,—this being the first low, thickly wooded point met with.

Allen's Cove. Allen's Cove, making in to the southward behind Herriman's Point, affords excellent anchorage, with deep water. There is nothing in the way,—it being simply necessary to round Herriman's Point and steer boldly into the cove, anchoring at discretion. This cove is sometimes, although erroneously, called **Herriman's Cove.**

Burchland Shore. From Allen's Cove the western shore takes a long curve to the northwestward and then to the northeastward, forming a sort of bay opposite to the southwestern point of Long Island, and called the Burchland Shore. Anchorage may be had along this shore, or anywhere between Long Island and the main, well sheltered and protected from all winds. From Herriman's Point to Blue Hill is about seven miles,—the bay being one mile wide in its narrowest part but obstructed by sunken ledges, (none of which are buoyed,) and it is necessary to take a pilot either at Herrick's Bay or Tinker's Island. Sailing directions will, however, be given, as it might become necessary for a stranger to enter it without a pilot. The western shore from Allen's Cove to Blue Hill is of moderate height, gently sloping, and diversified with wooded and cleared lands dotted with houses.

Sand Point. A little over three miles above Herriman's Point, and nearly opposite to the middle of Long Island, is Sand Point, noticeable for the long, dry spit extending out to the eastward from the base of the higher ground, and having a single hut upon it. The land is here very gently sloping;—having a rise of twenty feet in one hundred and fifty yards,—is cleared, cultivated and settled, and shows perpendicular faces about ten feet high along its whole length as far up as Blue Hill Falls.

Carter's Point. From Sand Point to Carter's Point, sometimes called **Falls Point,** the distance is about a mile in a nearly **N.** direction; and the land is about equally divided between cleared fields and woods which occur alternately. Carter's Point is wooded close to the shore-line, and has perpendicular faces about fifteen feet high. Behind the woods the land rises to a height of one hundred feet, and is cleared, cultivated and dotted with houses.

Blue Hill Falls. Carter's Point is the southern point of entrance to Blue Hill Falls, a passage about seventy-five yards wide leading to a long, shallow lagoon extending to the southwestward for three miles, and known as Salt Pond. The entrance at the Falls is closed by a causeway leading from Carter's Point to a bare rocky island about forty feet high and a quarter of a mile in diameter, and which is joined to the mainland by two causeways and a dam.

Salt Pond. Salt Pond is irregular in shape,—being in some places three-eighths of a mile wide and in others (as at **Carleton's Island,** about midway of its length) only one hundred and fifty yards. Both its shores are rocky; but while the eastern bank is for the most part thickly wooded and covered with ledges, the western side is for the most part cleared and settled,—forming the site of the village of **North Sedgewick.** This western shore is also the highest and steepest except close to the bank,—the hills rising in some places to a height of over two hundred feet. The place is of no importance.

From the Falls to the entrance to Blue Hill Harbor the western shore of the bay is extremely irregular in outline,—being nothing but a line of coves and projecting points. It has a general direction about **N.** for about two miles, is of moderate height, rugged and barren, and diversified with woods and cleared lands. Many dangerous bare and sunken ledges lie along its length; and until a survey has been made of this part of the coast strangers must not approach it without a pilot, who may be obtained at Tinker's Island or at Herrick's Bay.

Blue Hill Bay (locally so called) is separated from Union River Bay by a very large island,—the largest as well as the northernmost of the group before mentioned as dividing the bay proper into two parts. This island is called Long Island, and is about five miles long **N.** and **S.**,—its southern end lying opposite to Herriman's Point and its northern end extending beyond Blue Hill Falls. It is of somewhat irregular shape, but has an average width of about a mile and a half. It is nearly two miles to the northward of Tinker's Island, and its southern end, called **Hopkins' Point,** lies due **E.** from Herriman's Point. Viewed from the southward, Long Island will appear large, high, partly wooded and partly cleared and cultivated, with groups of houses here and there. Hopkins' Point is long, low, gently sloping, and grassy to its southern end except on its southwestern side, where there is a thin fringe of scrub. A couple of fish-houses stand near the shore; and a little green, rocky islet, with one or two spruce trees, lies close in with the shore. This is called **Long Island Hub.** Long Island is thinly settled,—the few houses that are there lying along the southern and western shores; but the eastern shore is mostly covered with high, thick woods. **Long Island.**

Blue Hill Harbor is an irregularly shaped cove at the northwestern end of Blue Hill Bay, and is not safe for strangers to enter. Its extreme length is about a mile and a quarter **NW.** and **SE.**; but it is naturally divided into an Inner and Outer Harbor,—a passage only one hundred and fifty yards wide connecting the two. The **Outer Harbor** is about half a mile long, with an average width of a quarter of a mile; but at its entrance it is but three hundred yards wide, and this is further diminished by **Sculpin Ledge,** which extends to the westward about one hundred yards. The **Inner Harbor,** at the head of which is situated the village, is about seven-eighths of a mile long with an average width of seven hundred yards; but the available anchorage is very much contracted by ledges, and at low water by extensive flats. The head of the harbor is bare at low water. The northern shores of Blue Hill Harbor are almost all cleared, settled and cultivated, and extend with a regular upward slope to the base of Blue Hill. The southern shores are mostly wooded except close to the bank, where cleared patches are occasionally seen. **Blue Hill Harbor.**

The settlement of **Blue Hill** lies at the southern base of the mountain and extends part of the way up its slopes. It is a flourishing village, and does considerable business in lumber, granite and ship-building. There is an excellent passage into this harbor along the northern shore of Long Island and between it and Newbury Head, the western point of entrance to Union River Bay.

The main channel from the westward to Ellsworth leads through between Hopkins' Point and Tinker's Island.

The **Northern Shores of Blue Hill Bay** have a general direction about **SE.** from **Sculpin Point,** the northern point of entrance to Blue Hill Harbor, to Wood's Point, a distance of about a mile and a half. This shore, which is known as **Darling's Shore,** shows alternate cleared and wooded lands, with somewhat steep slopes, and rising to a height of over three hundred feet. All of the higher land is densely wooded. **Darling's Point** is six hundred yards to the eastward of Sculpin Point and is low and wooded. **Closson's Point,** six hundred yards to the eastward of Darling's, is low, flat, and entirely cleared except for a small clump on its western side. Wood's Point is low and thickly wooded, and has a small stream dividing it, which descends through a very narrow ravine from the higher lands. There are dangerous ledges to the eastward of this point; and a round flat island, about one hundred yards in diameter, lies about six hundred and fifty yards **E.** from it. This island, which is called **Darling's Island,** is surrounded by ledges bare at low water, and has a group of trees near its southern end extending nearly across it. Vessels must not pass to the westward of this island. **Wood's Point.**

From Wood's Point the shore turns abruptly about **NE.** for nearly seven-eighths of a mile to Eagle Head,—the western point of entrance to a small cove of little importance, called McHeard's Cove. Between the two points it is nearly all high, steep and thickly wooded; but there are a few clearings and houses. Between five and six hundred yards above Wood's is a stone-quarry, easily recognized by the stone-sheds and a long wharf, called **Chase's Wharf.** This latter is nearly opposite to Darling's Island. Four hundred and fifty yards above this is **Cooper's Point,** low and flat, and backed by very steep, thickly wooded land. There is a single house close to the shore Four hundred yards above Cooper's is **York's Point,** also low and wooded, with a single house upon it. **Eagle Head** is about five hundred yards above York's Point, and is forty feet high and well wooded, with steep faces about twenty feet high.

McHeard's Cove is about half a mile long, three hundred yards wide at its mouth, and gradually contracts to its head, where it is crossed by a mill-dam. A small settlement, called **McHeard's Village,** is situated at its head and on both banks. **Birch Point,** its northern point of entrance, is low, flat and densely wooded. On its eastern side is a small cove, called **Curtis' Cove;** and hence the shore has an **E SE.** course for nearly half a mile to Conary's Point,—the western point of entrance to Morgan's Bay. This shore is all cleared and somewhat gently sloping, with a few houses here and there on the slopes. **McHeard's Cove.**

Morgan's Bay is contained between Newbury Neck on the east and the mainland of Blue Hill Township on the west, and runs about **N NE.** and **S SW.** for nearly three miles and a half. At its mouth, which may be said to commence between Conary's Point and The Nook, (on Newbury Neck,) it is a little over a mile and a quarter wide; but it gradually contracts to half a mile at The Narrows, and then again widens into a sort of circular bay, nearly three-quarters of a mile wide at its head. Here is a small settlement. There is good water, but the entrance is much obstructed by islets and ledges,—rendering the services of a pilot necessary. The bay is, however, little frequented. **Morgan's Bay.**

Conary's Point, the western point of entrance, is low, nearly level, cleared and cultivated. There is a house close to the shore, and just above it stone-sheds and a wharf and derrick, belonging to the stone-quarries. A flat, wooded islet, about seventy-five yards long, called **Conary's Nub,** lies four hundred and fifty yards to the southeastward of the point.

Newbury Neck, part of which forms the eastern shore of Morgan's Bay, varies in height from sixty feet near The Narrows to one hundred and forty feet between The Nook and Southwest Point. On its western side, which is the eastern shore of the bay, it is gently sloping and densely wooded. On its eastern side, which forms the western shore of Union River, it is entirely cleared, cultivated and well settled. **Southwest Point**, its southwestern extremity, is a wooded headland of moderate height with steep faces about ten feet high. Thence to The Nook its western shore runs about **N.** by **E.** for a mile and a quarter and is all thickly wooded.

Newbury Neck.

The Nook is a small cove in the western shore of the neck, and affords anchorage and shelter in southerly and easterly winds. Its shores are all densely wooded. Thence the neck runs nearly **N.** by **E.** for nearly a mile and three-quarters to **Log-landing Point**, on the eastern side of which is another snug cove, called **Log-landing Cove**, which also affords shelter in southerly and westerly winds. Log-landing Point is low, flat and thickly wooded. A little over half a mile above it is **The Narrows**, sometimes called **The Carrying Place**; and above this no description can be given.

Between Conary's Point and The Nook the entrance to Morgan's Bay is obstructed by islands and ledges;—the principal of which are Jed's Islands and Conary's Nub. The latter has already been described. Jed's Islands are two, lying nearly **N.** and **S.** from each other at a distance of two hundred yards, but joined at low water. The northernmost and largest is about two hundred and fifty yards in diameter, is low, flat, and entirely bare except for a few trees near the shore-line. It is about five-eighths of a mile **N.** by **W.** from The Nook, and nearly half a mile from the eastern shore of the bay. The southernmost islet is but one hundred and fifty yards long and quite narrow, and both are surrounded by ledges bare at low water. A ledge out at three-quarters ebb, and called **Jed's Island South Ledge**, lies nearly four hundred yards **SW.** from the southern island; and a bare rocky islet about thirty yards in diameter, and called **Bird Rock**, lies three hundred and fifty yards **W.** from the northernmost island. You may pass between Jed's Islands and the eastern shore; or may leave the islands to the eastward and pass between them and Conary's Nub; but this latter passage is obstructed by Bird Rock, and also by another bare islet, called **Seal Ledge**, surrounded at low water by bare rocks. Seal Ledge lies nearly midway between the northernmost of the Jed's Islands and the quarry wharf; but is easily avoided in day-time, as it is always out.

Jed's Islands.

The western shore of Morgan's Bay from Conary's Point has a general direction about **NE.** by **N.** for a little over a mile to Webber's Cove;—the land being, for the most part, high, steep and wooded. Between five and six hundred yards above the quarry wharf is **Nelson's Wharf**; and six hundred yards to the northward of this is **High Bluff**, a steep, wooded head, two hundred feet high, on top of which there was, in 1877, a Coast Survey tripod. Above High Bluff the land becomes lower and gently sloping; but continues wooded to **Carter's Wharf**, about six hundred yards above,—where there is a small stream, on the northern side of which the shore is entirely cleared for about three hundred yards back from the beach and is under cultivation. Here is a small bare rock about forty yards in diameter and fifty yards from shore, called **Closson's Island**, and connected at low water with the shore. Webber's Cove is a small cove with cleared shores sloping gently back to the woods; and affords shelter for small vessels in westerly winds, but is open to the southward. Its northern shore runs about **E.** by **S.** $\frac{1}{2}$ **S.** for about four hundred and fifty yards to **Cousins' Point**, which is a little over a mile and a quarter above Conary's. This point is low, gently sloping and cleared, and is almost directly opposite to Log-landing Cove, on the eastern shore. Above Cousins' the bank is cleared and backed by woods as far up as The Narrows, which begin about eight hundred yards above. Beyond this no description other than the general one on page 155 can be given.

Webber's Cove.

From Southwest Point of Newbury Neck the southern shore of the neck runs about **SE.** by **E.** nearly half a mile to Burnt Point, low, flat and wooded. This southern end of the neck is about eighty feet high, somewhat steep, and almost entirely under cultivation. From Burnt Point the shore runs about **NE.** by **E.** five-eighths of a mile to Newbury or High Head, the western point of entrance to Union River Bay. It is almost all wooded except at High Head,—and there is an islet about midway between the two points and one hundred yards from shore called **Goose Rock**, and sometimes **Treworgy's Hub**. It is low, flat, thinly wooded with spruce and fir, about one hundred yards long, and connected with the shore at low water.

Burnt Point.

UNION RIVER BAY

(or **Union River**, as it should properly be called) enters between Oak Point and Newbury Head;—running in a **NNE.** direction for about ten miles to Ellsworth. It has an average width of a mile and a quarter for about seven miles above Newbury Head to Weymouth Point, where it suddenly contracts and becomes a narrow stream only a few hundred yards wide, and gradually diminishing to about one hundred and fifty yards at the town of Ellsworth. Both shores of the bay are nearly straight, running between cleared and cultivated lands rising with a gentle slope and dotted with groves of trees.

Oak Point, the eastern point of entrance, (see page 133,) is also the northern point of the western entrance to Trenton River, and is low, cleared and cultivated, and dotted with clumps of trees. Newbury Head, or High Head, as it is sometimes called, is the southeastern extremity of a very long and narrow peninsula of the mainland of **Surry**, called **Newbury Neck**, as well as the western point of entrance to this bay. Notwithstanding the latter name it is very gently sloping and only sixty feet high;—its slopes for the most part bare, but showing a few small clumps of trees, giving the land the appearance of a park. On its northern side makes in **Curtis' Cove**, a small indentation of no importance.

Newbury or High Head.

From Newbury Head to Hopkins' Point, a mile and three-quarters above, the western shore of the bay runs about **NE.** by **N.**, and is entirely cleared and cultivated. Houses dot the slopes about half way up, forming a continuous settlement as far up as Weymouth Point. Hopkins' Point is low, flat and cleared, except for a thin grove of trees on its extremity. It is directly opposite to Haynes' Point on the eastern shore. **Hopkins' Point.**

Between eight and nine hundred yards above Hopkins' Point is **Haskells' Point**, also low, flat and cleared. Above this point the western shore has a general course about **N.** for nearly a mile and a half to Treworgy's or Carrying-Place Cove. Here Newbury Neck, which separates this bay from Morgan's Bay, is only about three hundred and fifty yards wide, and the land is low and nearly level. The northern point of the cove, called **Treworgy's Point**, is low, grassy, and fringed with a few small birch and maple; but most of its shores are cleared and under cultivation. There is good anchorage, and it is often used by coasters. From Treworgy's Point the shore runs about **NE.** and then nearly **N.** to Patten's Bay, about two miles and a half above, and is for the most part cleared, cultivated and settled,—the cleared lands being backed by thick woods. From this bay to Weymouth Point, the western point of entrance to Union River, the distance is about a mile and a half and the direction **SE.** **Treworgy's or Carrying-Place Cove.**

The eastern shores of Union River Bay have a general course about **NNE.** to the entrance to Union River, (abreast of Weymouth Point,) a distance of about seven miles, and are for the most part wooded, although cleared patches appear here and there. The land is lower than on the western side of the bay and is nearly level. Southwest Point is about a third of a mile above Oak Point, and is low, flat, cleared and backed by thick woods. In 1877 there was an old wreck on the rocks just above this point. Three-quarters of a mile above is Haynes' Point, also flat, cleared and backed by woods; but having one or two houses a short distance back from the beach. The shore is wooded half-way from Southwest Point to Haynes', and beyond that cleared. Above Haynes' Point it is partly wooded and partly cleared. **Southwest Point.** **Haynes' Point.**

Weymouth Point lies about seven miles above Newbury Head and on the western side of The Narrows, and is low, rocky and thickly wooded. On its eastern side it is bold-to,—vessels frequently lying, to load wood, on that side; but off its southern end there are ledges, the outermost of which is three-quarters of a mile **S SW.** from the point. This point also forms the eastern point of entrance to Patten's Bay, a long arm of Union River, extending to the westward about two miles to the village of **Surry**. Its shores are of much the same character as those of Union River, but somewhat higher, cleared and settled, and diversified with wooded and cleared lands. There are no sailing directions needed for Patten's Bay,—it being only necessary to keep midway between the two banks. **Weymouth Point.** **Patten's Bay.**

It is necessary for vessels bound to Ellsworth to anchor at Weymouth Point and take a tug, as the river is too narrow for working with a head wind.

The Narrows commence about three-quarters of a mile above Weymouth Point and run **N** and **S.** The eastern point is called **Purrington's Point**, off which there is a red spindle with an oval cage on top, and a red spar-buoy just to the westward. The western point, called **Lord's Point**, is low, grassy, and has a small ship-yard on it. **The Narrows.**

Ellsworth is one of the largest towns in this section and does an immense lumber business. The river above Weymouth Point, however, is winding and very narrow; and it is almost always necessary to have the assistance of a tow-boat. It is the custom for vessels, unless they have a fair wind and a pilot, to anchor at Weymouth Point and wait for a tug.

The depth in the channel has been very much diminished of late years by the deposit of saw-dust and slabs from the mills, forming a regular bar, which in the course of time will close the river to navigation.

DANGERS

IN APPROACHING AND ENTERING BLUE HILL BAY.

I. ***From the Eastward, crossing Bass Harbor Bar.***—The first danger in this passage is Bass Harbor Bar, extending from Bass Harbor Head to Gott's Island, and having fourteen feet at mean low water in the channel across it. The soundings are pretty regular, varying from thirteen to sixteen feet over almost the entire length of the bar, but there are *one or two spots with twelve feet;* and a long ledge makes off from Gott's Island along the western edge of the bar for a little over half a mile, on which there is as little as eight feet water. This contracts the channel across the bar, compelling vessels to keep Bass Harbor Head rather more aboard. (See also page 147.) ***Bass Harbor Bar.***

Gott's Island should not be approached on its northern side by any one not perfectly familiar with the shoals extending to the northward, which are many and dangerous.

Crossing Bass Harbor Bar, the course leads along the western shore of Mount Desert Island, leaving Black Island, Pond Island and The Ship and Barges to the westward. The channel is over two miles wide and perfectly unobstructed. If beating to windward, do not approach **The Barges** very closely, although they are quite bold-to both on their northern and eastern sides. Upon the northernmost of them, which is a little over half a mile to the southward of Ship Island, is placed an iron spindle thirty feet high, painted red, and having a cask on top. It is on the northern end of the rock, which is dry at half-tide. ***The Ship and Barges.***

The southern end of Ship Island should not be approached in beating to windward nearer than an eighth of a mile, and its eastern side not nearer than five hundred yards, as both sides are shoal.

Goose Rock. On the eastern side of the channel, about half a mile to the northward of Goose Cove, and about four hundred yards from shore, lies a small bare rock called Goose Rock. There is a passage for light-draught vessels inshore of it, and it is quite bold-to on its western side.

The Nub. About five-eighths of a mile to the northward of Goose Rock, and nearly three hundred yards from shore, lies another bare rock, called The Nub. It is half a mile below the entrance to Seal Cove, and there is no passage inside of it at low water except for vessels of very light draught. The Nub should not be approached on its southern side nearer than three hundred yards, as there is a long ledge extending from it to the southward, which is bare at extreme low tides.

Hopkins' Point Shoal. On the western side of the channel vessels should not approach the southern end of Bar Island without a pilot, as it is quite shoal more than half-way across to Ship Island, and there is not more than seventeen feet between the two. When past Bar Island there are no dangers until you approach Long Island, when look out for Hopkins' Point Shoal, making in a southerly direction nearly a quarter of a mile from the point, and not buoyed.

If you are bound to Blue Hill, when past Tinker's Island turn to the westward and use the western passage; or, continue up the main channel between Hardwood and Long islands, passing between the latter and Newbury Head, and enter by the channel to the northward of Long Island. *But if bound to Ellsworth,* pass between Hardwood and Long islands, (as before,) and steer up for Oak Point, passing between Bartlett's Island and Newbury Head. There are no dangers in the channel, and it affords good beating room until you approach Weymouth Point, where it is usual to anchor. This point is shoal,—there being several ledges off its southern end; and three-quarters of a mile **S SW.** from it is a detached ledge, called Tupper's Ledge, bare at low water, and marked by a black spar-buoy (No. 3) placed to the southward of the shoal in three fathoms. A passage with good water exists between it and Weymouth Point, but it is not safe for strangers. It may be remarked, however, that when near Purrington's Point a black spar-buoy may be seen on the western side of the river. This is on *Horton's Rock,* which is out at low water, and is to be left to the westward.

Tupper's Ledge.

Off Purrington's Point a ledge extends, on the dry part of which is a red spindle with oval cage on top, and a red buoy to the westward of it to mark the edge of the channel, which is here very narrow.

In the passage to Blue Hill, between Long Island and Newbury Head, there are no dangers. In that leading between Tinker's Island and Long Island the first danger is Hopkins' Point Shoal, (mentioned above,) a quarter of a mile to the southward and eastward of Hopkins' Point, and not marked in any way. When past it, a red spar-buoy will be seen off the northwestern end of Tinker's Island, about three-quarters of a mile from it. This is on Cow and Calf Ledges, a dangerous group of rocks, two feet out at half-tide, lying **NW.** from the northwestern end of Tinker's Island, with no passage inshore of them. The buoy is marked No. 4, placed about one hundred yards to the northwestward of the ledge, in twenty feet water, and is to be left to the southward by vessels using this passage. When past this buoy the channel is clear, and affords good beating room until you are past Long Island and up with the harbor entrance. Do not attempt to enter the harbor without a pilot, as it is full of shoals.

Cow and Calf Ledges.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BLUE HILL BAY.

I. ***From the Eastward, crossing Bass Harbor Bar.***—Bass Harbor Bar is crossed on a course of **W.** by **N.** ¼ **N.**, in fourteen feet water. This course must be continued until you are past the entrance to Bass Harbor and Bass Harbor Head Light-house bears **E.** ¼ **S.** and the western extremity of Bass Harbor Point **N.** ½ **E.** Now, in fourteen and a half fathoms, soft bottom, steer **NW.** by **N.** along the western shore of Mount Desert Island, about for the southern end of Long Island. On this course there is not less than twelve fathoms until up with Tinker's Island. Pass about midway between Long and Hardwood islands on a **N.** by **E.** ½ **E.** course, and when abreast of the southeastern point of the former steer **N NE.**, which leads safely up the middle of Union River Bay; after which no further directions are necessary except to look out for Tupper's Ledge, lying **S SW.** from Weymouth Point, and which is easily avoided by keeping the eastern shore aboard.

The above courses cross Bass Harbor Bar in fourteen feet water; pass one hundred and fifty yards to the northward of the shoals off Gott's Island; about a mile and a half to the eastward of The Ship and Barges; nearly half a mile to the westward of Goose Rock; and three-quarters of a mile to the eastward of Hopkins' Point Shoal.

On the above courses, to proceed up to Blue Hill by the main entrance between Long and Tinker's islands.—Continue the course **NW.** by **N.** towards Long Island until nearly abreast of the northern end of Tinker's Island and it bears about **W.**, when there will be seen the red spar-buoy on Cow and Calf Ledges to the westward, and you must steer **NW. ½ W.** towards the Burchland Shore, keeping about one mile from Tinker's Island to avoid the ledges. Continue this course until about midway between Herriman's Point and the southwestern end of Long Island. After this keep the middle of the passage, as there are no obstructions and no sailing directions are necessary. When nearly up with the northern end of Long Island and Blue Hill bears **N.** by **W. ¼ W.**, steer for it, which will lead up to the harbor entrance. *Sailing Directions--Blue Hill Bay.*

On the above courses there is not less than twenty-one feet at low water. They pass a quarter of a mile to the northward of the buoy on the Cow and Calf Ledges, and a mile to the southward of Hopkins' Point Shoal.

DANGERS

IN APPROACHING AND ENTERING BLUE HILL BAY.

II. ***From the Eastward, by the passage between Placentia and Burnt-Coat islands.***—In approaching by this passage there are no dangers until past the Duck Islands and steering up towards Burnt-Coat Island, when you must look out for The Drums, very dangerous ledges, dry at two-thirds ebb, lying nearly two miles **S SE.** from the middle of Black Island, two miles and three-eighths **NE. ¾ N.** from the southeastern end of Long Island, and two miles and seven-eighths **W NW.** from the southern end of Great Duck Island. They cover an area of about a quarter of a mile, and are marked by a black spar-buoy (No. 5) placed about two hundred feet to the southeastward of the ledge in five fathoms water. *The Drums.*

Nearly a mile **N.** by **E. ½ E.** from The Drums lies another dangerous ledge, with six feet at low water, covering an area about six hundred yards long by three hundred wide. It is called Horse-Shoe Ledge and is not buoyed, but should be, as the passage between it and The Drums is nearly three-quarters of a mile wide, with not less than ten fathoms, and entirely unobstructed. *Horse-Shoe Ledge.*

When nearly abreast of the **Scrag Islands** (the two small rocky islets three-quarters of a mile to the southward of Black Island) look out, on the western side, for a detached ledge, bare at low water, which lies about seven hundred yards to the eastward of the easternmost of The Sisters, and is known as Otter Island Ledge. It is not buoyed; but is easily avoided by keeping the middle of the passage if you have a fair wind, or, if beating, by not standing to the westward of the southeastern end of Long Island bearing **S. ¾ E.** *Otter Island Ledge.*

When past Otter Island Ledge and approaching Placentia Island look out for Staples' Ledge, which lies about seven hundred yards to the northeastward of Staples' Point and about a mile and a quarter to the northward of East Point, the southeastern extremity of Burnt-Coat Island. It is out at extreme low tides, and is marked by a black spar-buoy (No. 3) placed on its eastern side in three fathoms water. When past this ledge there are no more dangers until you come up with The Ship and Barges. *Staples' Ledge.*

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BLUE HILL BAY.

II. ***From the Eastward, by the passage between Placentia and Burnt-Coat islands.***—Being about five miles and a quarter due **S.** from Baker's Island Light-house, in twenty-seven fathoms water, steer **W.** by **S.**, passing to the southward of the Duck Islands, and having the southern end of Long Island a little to the northward of the course. Continue this course until the middle of the passage between Placentia and Burnt-Coat islands bears **N NW.**, when steer that course, which will lead directly towards Herriman's Point. On this course, when the northern end of Tinker's Island bears **E.** by **N. ½ N.**, distant five-eighths of a mile, and you are about a mile and three-quarters from Herriman's Point, steer **N. ⅛ E.** past the Burchland Shore, until you come abreast of the entrance to Blue Hill Harbor, or until Blue Hill bears **N.** by **W. ¼ W.**, when steer for it, which will lead safely to the harbor entrance.

The above courses pass a mile and a quarter to the westward of The Drums; seven hundred yards to the eastward of Otter Island Ledge; the same distance to the eastward of Staples' Ledge; three-eighths of a mile to the westward of The Ship; three hundred yards to the westward of the westernmost of The Barges; and half a mile to the eastward of Sand Island.

Sailing Directions---Blue Hill Bay.

Or, on the **W.** by **S.** ***course towards the southern end of Long Island,*** when that point bears **W.** $\frac{1}{8}$ **S.**, the middle of Black Island **NW.** by **N.** $\frac{5}{8}$ **N.**, and the southern end of Great Duck Island **NE.**, steer **NW.** $\frac{5}{8}$ **W.** exactly for East Point, (on Burnt-Coat Island,) and continue this course, carrying not less than eighteen fathoms, until within a mile and three-eighths of the point, with the westernmost of the Scrag Islands bearing **NE.** by **E.**, distant three-quarters of a mile, and the middle of the passage between Placentia and Burnt-Coat islands **N NW.** Now steer that course, and follow the directions previously given.

The above courses pass a little over half a mile to the westward of The Drums.

Or, being about a mile and a quarter due **S.** ***from Baker's Island Light-house,*** in fifteen fathoms, steer **SW.** by **W.** $\frac{1}{2}$ **W.** about for the middle of Long Island, and continue this course until past The Drums and within a mile and three-eighths of the island,—the middle of Black Island bearing **N.** $\frac{3}{4}$ **W.**, and East Point of Burnt-Coat **NW.** $\frac{5}{8}$ **W.** Now steer for the latter and follow the directions previously given.

The above courses pass a quarter of a mile to the northward of Little Duck Island; and four hundred yards to the southward, and a little over half a mile to the westward, of The Drums.

To pass to the Eastward of The Ship and Barges and enter Blue Hill or Union River Bay.—On the **N NW.** course between Placentia and Burnt-Coat islands, when the middle of the western end of the former bears **W NW.** and is exactly abeam, and Staples' Point (on the latter) bears **W SW.**, the southern end of Hardwood Island will bear **N.** $\frac{1}{4}$ **W.** Steer that course, passing three-quarters of a mile to the eastward of The Ship and Barges, and nearly seven-eighths of a mile to the eastward of Trumpet Island. Continue the course until you come abreast of Bar Island, when steer **N NW.** between Tinker's and Hardwood islands, heading towards the southern end of Long Island; and when Newbury Head bears **N.** by **E.**, steer **N.** by **E.** $\frac{1}{2}$ **E.**, between Long and Bartlett's islands, and then **N NE.** up the bay.

DANGERS

IN APPROACHING AND ENTERING BLUE HILL BAY.

III. ***From the Westward, by the passage between Burnt-Coat and Marshall's islands.***—To enter this passage from the westward it is necessary, when to the eastward of Isle au Haut, to get the middle of the passage to bear **N.** $\frac{3}{4}$ **W.**, which course will lead almost directly for the western end of Naskeag Point.

When up with Isle au Haut beware of *The Roaring Bull*, lying about a mile and a quarter off the southern shore, nearly midway between the Eastern Ear and Western Ear. It is very dangerous, breaks heavily, and is marked by a red spindle.

Five Fathom Rock.

When past the Spoon Islands you will cross a ledge with five fathoms, lying to the eastward of Heron Island, exactly on the range of Burnt-Coat Harbor Light-houses. It is called Five Fathom Rock, and is not dangerous except in heavy weather or to vessels of the largest draught. It can be avoided, when in its vicinity, by simply opening the range to the eastward or westward, as the rock is small.

Burnt-Coat Island has been already described on page 151, and need not, therefore, be repeated here. Marshall's Island will be found described on page 164, and, at its southwestern end, is remarkable as showing bare yellow rocks, with a sickly growth of spruce and fir. Behind this the land rises to a considerable height, with a dense growth of black-looking trees. The island lies **N NE.** and **S SW.**, is over two miles long, and has an average width of a little over a mile. It is about two miles and a quarter to the westward of Burnt-Coat Harbor entrance; and should not be approached too closely by strangers, as there are dangerous ledges lying in its vicinity.

Marshall's Island.

A line of islets stretches across the passage, the principal of which is **Heron Island,** about six hundred yards in diameter, low, flat, rocky, and wooded at its eastern end. It is a mile **E.** by **N.** $\frac{1}{2}$ **N.** from the southern end of Marshall's Island, and nearly two miles to the southwestward of the southern end of Harbor Island at the entrance to Burnt-Coat Harbor. Small bare rocks and islets lie on all sides of this island. Its southern end, called **Heron Island Point,** should receive a berth to the northward and westward, as it is shoal. Here lies Heron Island Ledge, which has nine feet at lowest tides, and is marked by a black spar-buoy (No. 1) placed in five fathoms about thirty yards to the southwestward of the shoalest part. The course passes to the eastward of the buoy.

Heron Island Ledge.

Spirit Ledge.

About three-quarters of a mile to the southwestward of the southern point of Marshall's Island lies Spirit Ledge, a bare rock or islet, surrounded by many sunken ledges. It is not in the way of vessels unless they are beating to windward, bound into Burnt-

Coat Harbor. There is a good passage, with over three fathoms, between this ledge and Marshall's Island. (See also page 164.)

Ringtown Island Ledge.

On the course for Naskeag Point the first danger met with is **Dry Ledge** or Ringtown Island Ledge, a bare rock a quarter of a mile **SE.** by **S.** from Ringtown Island, and also not in the way of vessels unless beating to windward.

On approaching Gooseberry Island beware of *Roaring Bull Ledge*, sometimes called *Gooseberry Island Ledge*, which is out at half-tide, and is marked by a black spar-buoy, (No. 3.) This ledge lies three hundred and fifty yards **E SE.** from the island; and the course passes to the westward of it. The next danger met with is on the eastern side of the channel, and is called *Hat Island Ledge*. It is bare at half-tide, lies about **W.** by **N.** ½ **N.** from the island, three hundred yards distant, and is marked by a red spar-buoy (No. 2) placed in five fathoms on its western side. The island should receive a berth of six hundred yards to the eastward to avoid this ledge.

Sunken Egg Rock.

When to the northward of Hat Island Ledge beware of Sunken Egg Rock, lying about two miles to the northwestward of Seal Cove Head and about a quarter of a mile **SW.** from **Egg Rock.** The latter is a mass of bare rock, and the ledge is detached from it,—having about nine or ten feet over it at low water. In smooth times the bottom is visible on this rock, and it is right in the track of vessels using this passage. A spar-buoy painted red and black in horizontal stripes is placed to the southward of it in three fathoms; and may be passed on either hand by giving it a berth of an eighth of a mile. Should the buoy be gone keep the Burnt-Coat Island shore aboard.

Rudder Rock.

Continuing the course to the northward, the next danger met with will be found off the eastern entrance to Eggemoggin Reach, and is called Rudder Rock. It is marked by a buoy painted red and black in horizontal stripes, and has four feet at mean low water. This ledge lies off the southeastern point of Crow Island (in Deer Island Thoroughfare) and about two hundred yards **S SE.** from it. The buoy is on its southwestern end, and, by vessels using this passage, is to be left to the westward. When past it, the western passage into Blue Hill Bay will open between Mahoney's Island and Naskeag Point, and the course turns to the northeastward, leaving Mahoney's Island to the eastward and Smutty-nose and Naskeag Point to the westward. On this course the first danger is Mahoney's Island Ledge, lying **SW.** from Mahoney's Island, and awash at low water. A red spar-buoy, marked No. 16, is placed in fifteen feet water on the northwestern side of the ledge, and bears from Devil's Head (on Hog Island) nearly **E SE.**, and from Eggemoggin Light-house about **SW.** by **S.** It is to be left to the eastward.

Mahoney's Island Ledge.

Pond Island Point.

When past Naskeag Point and steering towards Tinker's Island, a red spar-buoy will be seen well to the eastward and off the northwestern end of Pond Island. This is on Pond Island Point, here making with shoal water from the island to the buoy. The latter is marked No. 2, is placed in eighteen feet, sandy bottom, and is intended as a warning to vessels beating to windward not to approach too close to this point of the island.

Flye Point Ledge.

On approaching the light-house on Green Island a black spar-buoy will be seen to the southward of the light. This is on Flye Point Ledge, a large reef extending from Green Island nearly three-quarters of a mile to the southward. The buoy is marked No. 1, and is placed in five fathoms on the southeastern side of the ledge. Nearly due **E.** from this buoy, and to the northward of the course, will be seen, at the distance of a mile, a high, round, rocky islet, called **Channel Rock**, which you must leave to the eastward.

Cow and Calf Ledges.

When past Flye Point Ledge and Channel Rock the course turns to the northward, and a red spar-buoy (No. 4) will be seen off the northwestern end of Tinker's Island. This is on Cow and Calf Ledges, previously described, (see page 158.) When past this buoy the channel is clear and affords good beating-room until you are past Long Island and up with the entrance to Blue Hill Harbor. Do not attempt to enter the harbor without a pilot, as it is full of shoals.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BLUE HILL BAY.

III. ***From the Westward, by the passage between Burnt-Coat and Marshall's islands.***—When the middle of this passage bears **N.** ¼ **W.**, steer that course, which will lead nearly towards Devil's Head in the eastern entrance to Eggemoggin Reach. This course continue until past the red and black spar-buoy on Rudder Rock and the middle of Tinker's Island bears about **NE.** by **E.**, when steer that course, passing between Mahoney's and Smutty-nose islands; and when fairly through, steer **NE.** by **E.** ¼ **E.**, aiming to pass well to the eastward of Eggemoggin Light-house. When past it, *if bound to Blue Hill*, steer **N.** ¼ **W.** until past the southwestern end of Long Island; after which keep the middle of the passage, and proceed as directed for this harbor, (page 159;) *but, if bound to Ellsworth*, on the course **N.** ¼ **W.** bring the house on Flye Island to bear **SW.** by **S.** ½ **S.** and steer **NE.**

by N. ½ N. Nearly, for Hopkins' Point. This clears the buoy on Cow and Calf Ledges, and when made good should lead along the western shore of Tinker's Island at the distance of a mile. When past the Cow and Calf buoy, steer to the eastward towards Hardwood Island until past Hopkins' Point, when steer N NE. up Union River Bay, and follow the directions given on page 158.

DANGERS

IN APPROACHING AND ENTERING BLUE HILL BAY.

IV. ***From the Westward, having come through Eggemoggin Reach.***—Vessels from the westward come through either Eggemoggin Reach, Deer Island Thoroughfare, Merchant's Row, Casco Passage, or York Narrows; but as only the two former can be navigated without a pilot, it is unnecessary to give more than a general description of the others.

Mahoney's Island Ledge. Vessels having come through Eggemoggin Reach will meet—first, with a red spar-buoy (No. 16) lying to the southwestward of Mahoney's Island. This is on Mahoney's Island Ledge, awash at low water, and is placed in fifteen feet water on the northwestern side of the ledge. It bears from Devil's Head (on Hog Island) nearly E SE. and from Eggemoggin Light-house about SW. by S. It is to be left to the eastward.

When past Naskeag Point and steering towards Tinker's Island, a red spar-buoy will be seen well to the eastward and off the northwestern end of Pond Island. This is on Pond Island

Pond Island Point. Point, here making, with shoal water, from the island to the buoy. The latter is marked No. 2, placed in eighteen feet water, sandy bottom, and is intended as a warning to vessels beating to windward not to approach this point of the island too closely. (See also preceding page.)

On approaching Eggemoggin Light-house a black spar-buoy will appear to the southward of the light. This is on Flye Point Ledge, a long ledge extending from Green Island nearly

Flye Point Ledge. three-quarters of a mile to the southward. The buoy is marked No. 1, placed in five fathoms on the southeastern end of the ledge, and must be left to the westward. Nearly due E. from this buoy will be seen Channel Rock, nearly a mile distant. It is high, round and bare, and may be passed either to the eastward or westward.

Cow and Calf Ledges. When past Flye Point Ledge and Channel Rock the channel turns to the northward, and a red spar-buoy (No. 4) will be seen off the northwestern end of Tinker's Island. This is on Cow and Calf Ledges, bad half-tide ledges, consisting of one large and two small rocks, lying three-quarters of a mile NW. from the island. The buoy is in twenty feet water NW. of the rocks, and is to be left to the eastward.

The dangers in the passage leading to Blue Hill and Ellsworth have already been described. (See page 158.)

The above dangers are common to all the passages leading from the Thoroughfares; but *vessels having come through Deer Island Thoroughfare* will, before meeting with Mahoney's Island Ledge, and after passing Lazygut Island, steer NE. by N. for Crow Island until the highest part of Green Island bears W. by N., and thus will avoid Rudder Rock, a dangerous sunken rock,

Rudder Rock. with five feet at low water, lying about S SE. two hundred yards from the southeastern point of Crow Island. It is marked by a buoy placed in fifteen feet water on the southwestern end of the rock, and painted red and black in horizontal stripes. When past this buoy, the course leads between Mahoney's and Smutty-nose islands, passing to the westward of Mahoney's Island Ledge, and joins the eastern channel into the bay. The same dangers are encountered as those already described, viz: Pond Island Point, Flye Point Ledge, Channel Rock and Cow and Calf Ledges.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BLUE HILL BAY.

IV. ***From the Westward, having come through Eggemoggin Reach.***—When through the reach, bring the middle of Tinker's Island to bear NE. by E. and steer for it, passing between Mahoney's and Smutty-nose islands. When fairly through, steer NE. by E. ¼ E., leaving Eggemoggin Light-house well to the westward, and when past it haul up N. ¼ W., and proceed as previously directed for Blue Hill and Union River. (See pages 158 and 159.) Not less than three fathoms may be taken on the above courses up to the entrance to Blue Hill and past Newbury Head into Union River; and in some places there are from five to ten fathoms.

V. ***From the Westward, having come through Deer Island Thoroughfare.***—When past Lazygut Island, at the eastern end of the Thoroughfare, steer NE. by N. for the northwestern end of Crow Island. Keep this course until the highest part of Green Island bears W. by N., when haul to the eastward and steer NE. by E. for Mahoney's Island, aiming to leave it to the eastward and Smutty-

nose to the westward. When fairly through the passage, steer **NE.** by **E.** ¾ **E.** until past Eggemoggin Light-house, when haul up **N.** ¾ **W.**, and follow the directions previously given. Not less than five fathoms can be taken through the Thoroughfare; and there is plenty of water everywhere in the bay until you are past Newbury Head and in Union River, or the northern end of Long Island in the approach to Blue Hill. The bar in Union River and the shoals off Blue Hill require the assistance of a pilot. *Sailing Directions--Blue Hill Bay.*

LIGHT-HOUSES.

Name.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Bass Harbor Head Light-house	44 13 18	68 20 14	4 33 20.9	Fixed red.	56	13
Burnt-Coat Harbor Light-houses	44 8 0	68 27 0	4 33 48.0	Fixed.	42 & 75	11 & 14
Eggemoggin Light-house	44 14 54	68 29 52	4 33 59.5	Fixed.	26	9

TIDES.

Corrected Establishment at Bass Harbor, (approximate) ..... $11^h\ 2^m$
Mean Rise and Fall of tides ..... 10.1 ft.

VARIATION OF THE COMPASS.

The magnetic variation for 1879 is **15° 44′ W.**, with an approximate annual increase of **2′**.

ICE IN BLUE HILL BAY.

The duration of ice formations and their effect in this bay are similar to those in Frenchman's Bay. (See page 133.)

BURNT-COAT HARBOR,

situated on the southern side of **Burnt-Coat** or **Swan Island**, is one of the best harbors of refuge on the coast of Maine; and is lighted by two range-lights, rendering its approach easy both by day and night. Its western point of entrance, called **Hockomock** or **Hokomoaka Head**, is a bold, bare head, dotted with scrubby firs here and there; and the higher lands behind it have some scrubby trees adhering to their slopes. On this head stand the two light-houses, called Burnt-Coat Harbor Light-houses, the guides to the harbor. They are square, brick towers, painted white, standing **NE.** ¼ **N.** and **SW.** ¼ **S.** from each other, one hundred feet apart. The rear tower shows a fixed white light, of the fourth order of Fresnel, from a height of seventy-five feet above the sea, visible fourteen miles. The front tower is seventeen feet high, and shows a fixed white light, of the fifth order, from a height of forty-two feet above the sea, visible eleven miles. Their geographical position is **Burnt-Coat Harbor Light-houses.**

Latitude ..... 44° 8′ 1″ N.
Longitude ..... 68° 28′ 51″ W.

Burnt-Coat Harbor is a cove of irregular shape, making in on the southwestern side of Burnt-Coat Island, between Stanley's Point on the east and Hockomock Head on the west; but the entrance is very much contracted by a large island, called Harbor Island, lying exactly in the middle of the mouth of the cove;—the entrance being between this island and Hockomock Head. The harbor is about five-eighths of a mile wide at its widest part, near its mouth, and gradually contracts in width to the head of the cove, about a mile and a half above Harbor Island.

Harbor Island is high, rocky, partly bare and partly wooded, and has bluff, perpendicular faces to the westward. It is three-quarters of a mile long, and varies in width from three-quarters of a mile at its northern end to about three hundred yards at its southern extremity. To the southward of it are seen two low, rocky islets. That nearest to the island is called **Scrag Island**, and is low and has its northern half covered with trees. The other is called **Green Island**, is about twenty-five feet high and has a little grass on it. Between it and Scrag Island are several bare rocks, and ledges bare at half-tide; and a small bare rock surrounded by shoals lies a quarter of a mile to the northwestward of the latter and three hundred yards to the westward of Harbor Island. **Harbor Island.**

To the southeastward of Harbor Island and near the southern shore of Burnt-Coat Island lie two islands called, respectively, **Big Baker** and **Little Baker** islands. The former, which is three-eighths of a mile to the eastward of Scrag Island, is a little over a quarter of a mile long in a northwesterly and southeasterly direction and has an average width of three hundred yards. It is low,—being in no place more than twenty feet high,—and has a scattered growth of spruce and fir. Its northern end is distant from the southern end of Harbor Island a quarter of a mile in an easterly direction. Little Baker Island lies three hundred yards to the northeastward of Big Baker and four hundred yards from the Burnt-Coat shore. It is of an oval shape, lies **NW.** and **SE.**, is three hundred and fifty yards long, twenty feet high, and covered with spruce and fir. **Baker Islands.**

Stanley's Point. Stanley's Point, the eastern point of entrance to Burnt-Coat Harbor, is of moderate height and somewhat gently sloping,—the land behind it gradually rising to a height of eighty feet. It is partly cleared and partly wooded; and has several houses on its western side. Above it, the eastern shores of Burnt-Coat Harbor are mostly high and barren, with a very few scattered trees upon them. The western shores are more fertile, and show in places cultivated fields and grass-lands. There is a small settlement occupying both shores.

On the northern side of Stanley's Point is **Long Cove**, and next to the northward of this **Mill-pond Cove**. The latter is nearly bare at low water; and the former, though larger and deeper, is obstructed by ledges bare at low water lying in the middle of the entrance, and cannot, therefore, be entered by strangers. On the southern side of the entrance to Long Cove and about fifty yards from shore he two low flat islets, joined to each other and to the shore at low water; and off the northern side of the entrance lies an islet, about a hundred yards in diameter, called **The Potato Field**. It is low, level, and fringed with trees, but is otherwise bare. The Potato Field lies one hundred yards from shore, and there is no safe passage to the northward of it.

The southern point of entrance to Mill-pond Cove is flat, cleared, and has several houses on it. A ledge, bare at half-tide, makes from this point to the westward for nearly two hundred yards; and care must be taken not to approach it too closely. Two islets lie in the mouth of the cove,—the easternmost being thinly wooded, the other bare. Both are low and level, and at low water are joined to the northern shore by ledges.

The eastern shore of Burnt-Coat Harbor is all cleared, and is dotted with houses. The western shore shows alternate woods and cleared fields dotted with houses. It is an excellent harbor of refuge and much resorted to.

Coming from the westward, and intending to enter Burnt-Coat Harbor, Isle au Haut will first be seen. This island lies on the eastern side of the entrance to Penobscot Bay, about twelve miles to the westward of Burnt-Coat Island, and is nearly six miles long **N NE.** and **S SW.**, with an average width of a little over two miles. It is easily recognized

Isle au Haut. by its high land,—being highest in the middle and sloping gently towards its northern and southern ends. It is much the highest land in this vicinity, and is for the most part heavily wooded. There is a good harbor on its northwestern side, between it and Kimball's Island, called **Isle au Haut Thoroughfare**, and a settlement occupies both shores; but the rest of the island is very thinly settled.

Coming from the westward, outside of everything, the high land of Isle au Haut will first be seen; and, on approaching it, its southwestern extremity, called Western Head, will be passed first, and then its southeastern point, called

Eastern and Western Heads. Eastern Head. Both are steep, rocky bluffs, and each has a small, rocky island lying close to it, called, respectively, **Western Ear** and **Eastern Ear**. The large cove contained between Eastern and Western heads is not safe for strangers, as dangerous ledges lie off the southern shore.

Passing Eastern Ear, two rocky islets will be seen to the northward, called the Spoon Islands, lying nearly **E.** and **W.** from each other, off the eastern shore of Isle au Haut. The easternmost, called **Great Spoon Island**, is a little over two miles from the shore, of moderate height, rocky, and bare except for a few scattered trees on its summit. It lies nearly

Spoon Islands. **N.** and **S.**, is five-eighths of a mile long, and is half a mile to the eastward of **Little Spoon Island**. There is a channel between these two islands, but strangers should not attempt it. Little Spoon is nearly half a mile long, lies **N NE.** and **S SW.**, is rocky, and bare except for a heavy growth on its southern end. This end is the highest; while on Great Spoon the highest land is at the western end.

To the southward of Little Spoon Island, at distances varying from six hundred and fifty to nine hundred yards, lie two bare, rocky islets called The Horses. The easternmost islet, called **The White Horse**, is two hundred yards

The Horses. long **N NE.** and **S SW.**, twenty feet high, and lies six hundred and fifty yards **S.** by **E.** from Little Spoon Island. The westernmost, called **The Black Horse**, lies six hundred yards **W.** by **S.** ½ **S.** from The White Horse and nearly half a mile **SW.** by **S.** ½ **S.** from Little Spoon Island. It is also twenty feet high, steep and bare. Vessels must pass to the eastward of both rocks.

When past the Spoon Islands and heading up towards the harbor, a bare, rocky islet about fifty yards in diameter, but surrounded by very dangerous ledges, will be seen nearly a mile to the southwestward of Marshall's Island.

Spirit Ledge. This is Spirit Ledge, and must likewise be left to the westward. There are two ledges, each covering an area of about two hundred yards square; but the northernmost is always out, while the southern ledge is bare only at half-tide. The bare rock lies about seven-eighths of a mile **W.** by **S.** ½ **S.** from the southern extremity of Marshall's Island and nearly two miles and three-quarters **NE.** ½ **E.** from Great Spoon Island. There should be a spindle on the southernmost rock; and this will be recommended.

Marshall's Island will be seen just to the westward of Burnt-Coat Island and will appear as a large, high, thickly wooded island of very irregular outline, lying nearly **N NE.** and **S SW.** Its surface is undulating;—rising in places to a height of one hundred feet, and in others varying from forty to eighty feet. Its southern end, known as **Lower Head**, is remarkable as showing bare yellow rocks crowned with a sickly growth of spruce and fir;—behind which the land rises to a height

Marshall's Island. of eighty feet and is covered with a dense growth of black-looking trees. This island is nearly two miles long, and varies in width from a quarter of a mile at its southern end to a mile and an eighth in the middle; but it is barren, desolate, and uncultivated except in a few small patches on its northern end, where there are a few fields and houses. On the western side of Lower Head is a small cove called **Boxam Cove**, of no importance; but beyond this the western shore of the island has no indentations. On the eastern shore, however, five-eighths of a mile above Lower Head, is a large cove called **Sand Cove**, affording shelter in westerly or northerly winds. Its northern point of entrance is a thickly

wooded, rocky head fifty feet high, called **Devil's Head,** and connected with the island by a narrow neck of flat land. From this head the entrance to Burnt-Coat Harbor bears **E.** by **N.** ½ **N.**, two miles and a quarter distant.

About seven-eighths of a mile **N NE.** from the northern end of Marshall's Island, and a quarter of a mile from the Burnt-Coat shore, lies Hat Island, easily recognizable by its yellowish bold head, about one hundred feet high, appearing above the trees which cover its slopes. It is well wooded except on its summit, (which is bare,) is about four hundred yards long, of an oval shape, and has a dangerous ledge, called **Hat Island Ledge,** bare at half-tide, lying an eighth of a mile to the westward. This ledge is not in the way except when vessels are passing into Eggemoggin Reach by the passage between Marshall's Island and Burnt-Coat. **Hat Island.**

Nearly five-eighths of a mile **E.** by **S.** ½ **S.** from Lower Head (on Marshall's Island) lies a low, flat, rocky islet, about four hundred and fifty yards long **E.** and **W.,** and covered only with grass. Nearly a mile to the southward of the head is another, also low, flat and bare, and about three hundred yards long **NE.** and **SW.,** with deep water (not less than ten fathoms) within four hundred yards of it. A mile and an eighth **E.** ½ **S.** from Lower Head is Heron Island, about seven hundred yards long **E.** and **W.** and five hundred **N.** and **S.** A flat, rocky islet, called **Urchin Island,** a little over a hundred yards in diameter and entirely bare, lies between eight and nine hundred yards to the northeastward of Heron Island, and there are dangerous ledges between them. All of these islands lie on the western side of the approach to Burnt-Coat Harbor by this passage.

Heron Island is low, flat and rocky, and its eastern end is covered with a thick growth of scrubby spruce; while its western end is bare of trees and has a single house upon it. Its southern end bears from the rear light-house at Burnt-Coat Entrance **SW.** ½ **S.,** distant two miles and three-eighths. The passage between this island and Green Island is over three-quarters of a mile wide,—affording beating-room; but it ought not to be attempted without a pilot. **Heron Island.**

When up with Heron Island, Green Island will be seen to the eastward, already described on page 163 as of moderate height, rocky and bare of trees. It lies upon the Burnt-Coat side of the passage, and is to be left to the eastward,—there being no passage between it and Burnt-Coat Island. **Green Island.**

Five-eighths of a mile to the westward of the range-lights will be seen Gooseberry Island. It lies off at a distance of eight hundred and fifty yards, and appears as a bare rocky island, about an eighth of a mile long **N NW.** and **S SE.,** and about twenty feet high. Gooseberry Point is just above Hockomock Head, and is steep, rocky and thickly wooded. There is a passage between the point and the island, which is sometimes used by those living in the vicinity; but it is obstructed by a dangerous ledge, bare at half-tide, and nearly two hundred yards long, lying nearly **N NW.** and **S SE.,** exactly in the middle of the passage; and also by **Roaring Bull Ledge,** which lies about three hundred and fifty yards **E SE.** from Gooseberry Island and is bare at half-tide. **Gooseberry Point** **Gooseberry Island.**

Ringtown Island, sometimes called **Little Marshall's Island,** a small but high, rocky island, lying off the eastern shore of Marshall's Island, near its northern end, is covered with a growth of scrubby fir, spruce and birch; but its sides are bare and show conspicuous white rocks. A bare rock, called **Dry Ledge,** lies a quarter of a mile **SE.** by **S.** from the island. **Ringtown Island.**

Harbor Island lies in the middle of the entrance to Burnt-Coat Harbor and is to be left to the eastward. Seen from the westward it appears as a somewhat bluff, rocky island, partly wooded and partly bare, and lies just to the northward and eastward of Green Island. (See page 163.)

About a quarter of a mile **W.** by **N.** ½ **N.** from Gooseberry Island lies The Old Sheriff, a bare rock, about one hundred yards in diameter, showing two round rocky humps, without vegetation of any kind. Two ledges bare at half-tide lie in the middle of the passage between it and Goosberry Island; and this passage is, therefore, not available for strangers. **The Old Sheriff.**

DANGERS

IN APPROACHING AND ENTERING BURNT-COAT HARBOR.

I. ***Coming from the Eastward and passing to the Southward of Long Island.***—In coming from this direction you will first pass Long Island, a large island about two miles and a half to the southward of Burnt-Coat Island, and off its southeastern end. It is the southernmost of the islands lying off the entrance to Blue Hill Bay, lies nearly **E.** and **W.,** and is about a mile and a half in diameter; but very irregular in shape,—being indented by numerous coves, some affording good shelter. On its northern shore is a very convenient little harbor of refuge, formed by a small and narrow cove making to the southward, and protected from northerly winds by an islet called **Harbor Island.** This is called **Lunt's Cove** or **Lunt's Harbor,** and is often resorted to by vessels of light draught. It would not be advisable, however, for a stranger to attempt to enter it without a pilot. There is a small settlement here; but most of the island shows rocky and thickly wooded shores. ***Long Island.***

Between Long and Burnt-Coat islands are several small, rocky islands, some having good passages between them. Of these the most important are The Sisters, lying off the southeastern end of Burnt-Coat,—the easternmost being about one mile from it,—and **Crow Island,** lying nearly in the middle of the passage between The Sisters and Long Island. It is not usual for strangers to attempt either of these channels, but to go to the southward of Long Island, steering towards Heron Island until the lights are brought in range. ***The Sisters.***

The eastern shore of Burnt-Coat Island, when viewed from the eastward, will appear low and very thickly wooded with a variety of trees. Here and there, on higher land back of the shore, appear cleared fields and a few houses; but as a rule this side of the island is very thinly settled.

John's Island Ledge.

John's Island is a small, rocky island, lying about a mile and an eighth to the westward of Long Island, and is not approached by vessels wishing to enter Burnt-Coat Harbor unless they use the passage to the northward of Long Island, when it is to be left to the southward. Three-quarters of a mile **S.** by **W.** ¼ **W.** from this island lies a ledge with six feet at low water, called John's Island Ledge. It is marked by a red can-buoy (No. 2) of the second class, placed in eight fathoms about thirty yards to the southwestward. This buoy bears from the southwestern point of Long Island **W.** by **N.** ¼ **N.**, distant one mile and three-quarters.

Heron Island Ledge.

When past the buoy on John's Island Ledge the course turns to the northwestward, passing between Green and Heron islands; and the next danger met with is Heron Island Ledge, already described as a ledge with nine feet at lowest tides, and marked by a black spar-buoy (No. 1) placed in five fathoms about thirty yards to the southwestward of the shoalest part. The course passes to the eastward of the buoy; and beyond this the dangers are the same as those met with in coming from the westward.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BURNT-COAT HARBOR.

I. ***Coming from the Eastward and passing to the Southward of Long Island.***—Pass two miles to the southward of Long Island on a **W.** ½ **S.** course, and as soon as Heron Island bears **NW.** ½ **W.**, with Devil's Head (on Marshall's Island) a little to the eastward of it, steer that course, keeping the range and carrying not less than eleven fathoms until the range of the harbor lights comes on, when you will be about three-eighths of a mile from Heron Island. Now steer in on the range **NE.** ¾ **N.**, carrying not less than five fathoms, and follow the directions for the harbor coming from the westward.

The above courses pass a mile to the southwestward of John's Island Ledge; three-eighths of a mile to the eastward of Heron Island; three-eighths of a mile to the northwestward of Green Island; a quarter of a mile to the eastward of Urchin Island; and two hundred yards to the westward of the northwestern end of Harbor Island.

DANGERS

IN APPROACHING AND ENTERING BURNT-COAT HARBOR.

II. ***From the Westward, by the main passage.***—When up with Isle au Haut beware of *The Roaring Bull,* lying about a mile and a quarter off the southern shore, nearly midway between the Eastern Ear and Western Ear. It is very dangerous, breaks heavily, and is marked by a red spindle.

Five Fathom Rock.

When past the Spoon Islands and on the course for the range lights, you will cross a ledge with five fathoms, lying to the eastward of Heron Island, exactly on the range of the lights. It is called Five Fathom Rock, and is not dangerous except in heavy weather or to vessels of the largest draught. It can be avoided, when in its vicinity, by simply opening the range to the eastward or westward, as the rock is small.

Heron Island Ledge.

Heron Island should receive a berth to the northward and westward, as its southern end, called **Heron Island Point**, is shoal. Here lies Heron Island Ledge, which has nine feet at lowest tides, and is marked by a black spar-buoy (No. 1) placed in five fathoms about thirty yards to the southwestward of the shoalest part. The course passes to the eastward of the buoy.

Spirit Ledge.

About three-quarters of a mile to the southwestward of the southern point of Marshall's Island lies Spirit Ledge, a bare rock or islet, surrounded by many sunken ledges. It is not in the way of vessels bound into Burnt-Coat Harbor unless they are beating to windward. There is a good passage, with over three fathoms, between this ledge and Marshall's Island. (See also page 164.)

Dry Ledge or **Ringtown Island Ledge** is a bare rock a quarter of a mile **SE.** by **S.** from Ringtown Island, and is also not in the way of vessels unless beating to windward.

On approaching Gooseberry Island beware of *Roaring Bull Ledge,* sometimes called *Gooseberry Island Ledge,* which is out at half-tide, and is marked by a black spar-buoy, (No. 3.) This ledge lies three hundred and fifty yards **E SE.** from the island; and the range passes to the eastward of it. When past this ledge the next danger is *Harbor Island Ledge,* lying off the northern shore of Harbor Island, and bearing from the rear light-house **S.** by **E.**, a quarter of a mile distant. It is to be left to the southward,—the northern shore of the entrance being kept aboard. A red spindle with wheel on top marks this ledge, which is dry at half-tide.

The Old Sheriff, as before described, is a rocky islet, formed by two round humps about twenty feet high. It lies to the westward of Harbor Island, and bears from the rear light **W.** and from the front light **W.** by **N.** These are all the dangers in approaching Burnt-Coat Harbor from the westward. ***The Old Sheriff.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BURNT-COAT HARBOR.

II. ***From the Westward, by the main passage.***—When to the eastward of Isle au Haut, bring the two lights in range (which will be on a bearing of about **NE.** ¾ **N.**) and steer for them until within two or three hundred yards, when haul off about **NE.** by **E.** to pass them. When they are fairly abaft the beam steer **N.** ½ **E.**, and anchor at pleasure. Not less than five fathoms may be taken in on the above courses.

GENERAL REMARKS

ON APPROACHING BURNT-COAT HARBOR FROM THE NORTHWARD.

Coming through Deer Island Thoroughfare or Merchant's Row and wishing to enter Burnt-Coat Harbor, beware, first, of *Gooseberry Island* or *Roaring Bull Ledge*, bare at half-tide, lying about **E SE.** from the island, three hundred and fifty yards distant. It is marked by a black spar-buoy (No. 3) placed in four fathoms on its southeastern side; and to avoid it, should the buoy be gone, the island should receive a berth of six hundred yards to the northwestward.

At night beware of **Ringtown or Little Marshall's Island Ledge**, which is always bare, and lies a quarter of a mile **SE.** by **S.** from Ringtown Island. It is sometimes called **Dry Ledge.**

Egg Rock is a mass of bare rock, lying about two miles from the western shore of Burnt-Coat and about **NW.** from Seal Cove Head. To the southwestward of it, about a quarter of a mile, there is a detached rock, with about nine or ten feet water, called *Sunken Egg Rock.* In smooth times the bottom is visible on this rock at low tides; and as it is right in the track of vessels who use this passage a buoy has been placed upon it, painted red and black in horizontal stripes. The ledge is called, erroneously, *Yellow Rock Ledge*, in the Buoy List. Should the buoy be gone keep the Burnt-Coat shore aboard to avoid this rock.

The channel between Burnt-Coat and Marshall's islands is quite wide,—being nearly two miles from shore to shore. As nearly all of the dangers are buoyed, it is comparatively safe; but is not likely to be used by strangers, as it presupposes having come through York Narrows, Deer Island Thoroughfare, or Merchant's Row.

EGGEMOGGIN REACH.

There are a number of passages, some of which have deep water in them, but all more or less obstructed, leading from Blue Hill Bay into Penobscot Bay, and affording quick communication between the two to such vessels as may have experienced local pilots on board. Of these passages, as before mentioned, there are five, which, beginning with the northernmost and most important, are named as follows: First, Eggemoggin Reach, commencing at Naskeag Point, (in Blue Hill Bay,) and having a general northwesterly course to Cape Rosier, (in Penobscot Bay.) Secondly, Deer Island Thoroughfare, beginning at Stinson's Neck, the southeastern point of Deer Isle, and running to the westward along the southern shore of Deer Isle into Isle au Haut Bay. Thirdly, Merchant's Row, passing between McGlathery's and Merchant's islands,—two large islands just to the northward of Isle au Haut. Fourthly, Casco Passage, leading between Black and Orono islands; and lastly, York Narrows, between Orono and the northern shore of Burnt-Coat Island. Of these the first two are the only ones commonly used,—the others being suitable only for vessels of light draught, or unfit for navigation without experienced pilots.

Eggemoggin Reach, a strait connecting Penobscot and Blue Hill bays, runs between the mainland of Brooklin, Sedgwick and Brooksville on the north, and Deer Isle and Little Deer Island on the south, and is about fifteen miles long. Its general course is about **NW.**, and its width at its eastern entrance (between Stinson's Neck and Naskeag Point) about three miles; and thence it gradually diminishes until up with the northern point of Deer Isle, where it further contracts to a little less than a mile. One mile to the westward of this (between Byard's Point and Little Deer Island) it is only about seven hundred and fifty yards in width; and from this point it increases in width to Buck's Harbor, where it is two miles wide. Between Condon's Point and the northwestern end of Little Deer Island, and between Cape Rosier and Pond Island, at its western end, it is a little over a mile wide,—the main channel passing to the southward of Spectacle Island. There is good water (not less than five fathoms) throughout its entire length; and it is the most commonly used of all the passages from Penobscot Bay to the eastward.

The western entrance to this reach is obstructed by many islands, through and among which lead the various channels. Of these the most important, beginning at the eastward, are Harbor, Hog, White or York Island, and Conary's Island.

Naskeag Point. Naskeag Point, the eastern point of entrance to the reach, is high, smooth, grassy, gently sloping and tolerably well settled. It is entirely bare of trees except on the summit, where there is a small grove of stunted spruce.

Stinson's Neck. Stinson's Neck (in reality an island, sometimes called **Green Island**) lies on the western side of the eastern entrance in a nearly **N.** and **S.** direction, and is a mile and three-quarters long. It is of moderate height and tolerably well settled, but its eastern shore is in most places thickly wooded. It lies off the eastern side of Deer Island, forming the eastern shelter to Southeast Harbor.

Crow Island lies about two-thirds of a mile to the eastward of the southeastern point of Stinson's Neck, and is low, with a thick clump of trees on its southeastern end and scattered spruce over the rest of the surface.

White Island. White Island or **York Island**, lying nearly in the middle of the entrance, but on the western side of the channel, and a little over a mile to the northward of Crow Island, is low, thickly wooded and rocky, with here and there a cleared, grassy spot. It lies **NW.** and **SE.** and is about half a mile long. Between this and Crow Island there are several rocky islets off the eastern shore of Stinson's Neck, which, however, are of little importance.

Hog Island. Hog Island lies on the eastern side of the channel and close in with the Brooklin shore. Seen from the westward it appears as a mass of bare, white rock, showing a bold, bluff head, called **Devil's Head**, which is the southern end of the island. Its northern end is also high, bare and rocky, and the two are connected by a strip of low land; so that, when to the westward and abreast of it, it appears like two rocky hills with a small valley between them. At the base of the northern head there is a thick growth of spruce,—the only trees on the island. This island is two-thirds of a mile long **NW.** and **SE.**; and the channel into Eggemoggin Reach leads between it and White Island. There is good anchorage between Hog Island and the mainland, where there is a porgy-oil factory.

Harbor Island. Harbor Island, next to the eastward of Hog Island, lies **W NW.** and **E SE.**, close in with Naskeag Point; and is about half a mile long and thickly wooded. Between the island and the point there is a small harbor for vessels of light draught, called **Naskeag Cove** or **Naskeag Harbor**; but it is of little importance.

Conary's Island. Passing between Hog and White islands, there will be seen ahead, bearing about **NW.**, a grassy island, called Conary's Island, of moderate height, bare of trees except for a peculiar growth of spruce clinging to its eastern head, and remarkable for a high, steep, bluff, rocky head on its northern side. This head, called **Conary's Island Head**, is eighty feet high, bare on its summit and fringed with a few spruce on its northern slopes. The island lies **W.** by **N.** and **E.** by **S.**, and is about three-quarters of a mile long. It is off the eastern entrance to Southeast Harbor. There is a single barn upon it, but no other houses. The courses pass to the eastward of it, between it and Babson's

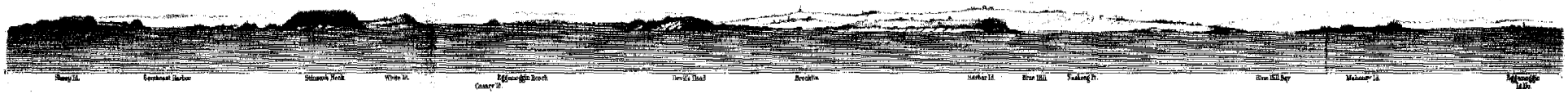
Babson's Island. Island, which is of moderate height, partly cleared and partly wooded, and shows a thick growth of woods on its western end, terminating in a grove of birch on its summit. At low water it is joined to another and smaller island, called **Little Babson's Island**, which is barren, rocky, and dotted here and there with spruce. These islands are sometimes, though erroneously, called **Sheep Island** and **Watson's Island**.

Torry's Islands. When past Conary's Island the course still continues to the northwestward towards Torry's Islands, lying nearly **E.** and **W.** from each other, on the northeastern side of the channel. The eastern islet is small,—being about a quarter of a mile in length, about thirty feet high, and entirely bare except for a lone tree in the centre. The western island lies three hundred and fifty yards to the westward of it, in about a **NW.** and **SE.** direction, and is over seven hundred yards long. It is only about twenty feet high in its highest part, somewhat undulating, has a single tree on its western end and a small clump on its summit. About **W.** by **N.** from the northwestern end, and three hundred and fifty yards distant, lies a bare rock, called **Torry's Castle**, which must also be left to the eastward. It is remarkable for two large white boulders on its summit,—the mass of the rock being of a reddish color.

The northeastern side of the reach from Naskeag Point to abreast of Torry's Islands is mostly thickly settled, and presents alternately cleared and wooded lands. The village of **Brooklin** occupies this shore abreast of and a little above Torry's Islands. A small cove, called **Centre Harbor**, about half a mile long, and with from eight to ten feet in it, forms the harbor of Brooklin. It is obstructed by a rocky islet of irregular shape, about four hundred yards long, thirty feet high and thinly wooded; and by a ledge bare at half-tide lying midway between this island and the northern shore. The island is called **Chatto's Island**, and the ledge, **Harbor Ledge**.

Cape Carter. The western side is, as before remarked, formed by the eastern shore of **Deer Isle**,—the lands being of moderate height, well settled, and alternately wooded and cleared. The reach is clear of islands to the westward of Torry's Islands and the northeastern shore mostly well wooded and low, with occasional groups of houses. Two miles beyond Torry's Castle, on this shore, lies Cape Carter, the eastern point of entrance to Benjamin River, on the western bank of which is built the village of **Sedgwick**. Cape Carter is a high, bluff head, covered only with grass and a very scanty growth of scrub, and terminates in a low, rocky point on its western side.

Benjamin River. Benjamin River runs about **NW.** and **SE.** and is nearly two miles long. Its width varies,—being about three hundred and fifty yards at its mouth, but increasing rapidly until, about half a mile above, it is half a mile wide. From this point it rapidly diminishes in width to a mere creek. The village, which is situated upon its western bank, is of little importance; but is one of the landing-places for the coastwise steamers, which have a large wharf with warehouses near the southern end of the town. The best anchorage is abreast of this wharf in five and a half fathoms, or with less water a little above it. The banks on both sides of the river are cleared and cultivated, rising gently to higher



View of Eastern Entrance to Eggemoggin Reach and Blue Hill Bay, Eggemoggin Lt. Ho. bearing N.by E.½ E, distant 5 Miles, and Devil's Head N by W.¼ W, distant 3 Miles.



View of Western Entrance to Eggemoggin Reach, Pumpkin Id. Lt. Ho. bearing E.½ S, distant 6¾ Miles, and Dice's Head Lt. Ho. N¾ E by N.¼ N, distant 3¾ Miles.

wooded land behind them. From the eastern bank of the river makes off a long sand-spit, bare at three-quarters ebb, and an eighth of a mile long, which diminishes the width of the channel by less than half at high water, and forms a breakwater to the Inner Harbor, which is thus made secure from all winds. The **Inner Harbor** begins at the steamboat wharf and continues to the northward to **The Narrows.** Sixteen feet at low water can be taken into the river.

From the entrance to Benjamin River the course of the reach continues to the northwestward, between cleared, cultivated and thickly settled lands, for about two miles, to Billings' Cove, or **Sargent's Cove,** as it is sometimes called, also on the northern side of the reach. The cove runs **N.** and **S.** for about two-thirds of a mile, is a little over half a mile wide at its mouth, and gradually contracts to a width of two hundred yards at its head. Good anchorage may be found a little inside of the entrance, and it is only necessary to keep midway between the two shores in going in. It is rarely used, however, as vessels mostly anchor off Sedgwick. **Billings' Cove.**

On the southern side of the reach, opposite to Billings' Cove, will be seen the passage leading between Deer Isle and Little Deer Island into Penobscot Bay. It is usually known as the Northwest Slue, and is dry at low water; but is sometimes used at high water by vessels of light draught. At its northern entrance it is about half a mile wide, but increases gradually to its southern end, where it is nearly one mile wide. The whole passage is a little over one mile in length, and full of dangerous ledges and shoals. Almost exactly in the middle will be seen a wooded islet about twenty feet high, with partly rocky and partly sandy shores. This is **Carney's Island.** Close to the eastern end of Little Deer Island, and connected with it at low water, lies another islet, called Stave Island. The latter is very remarkable for the bluff, rocky head on its northern end, which is bare of trees except a thin growth of scrub extending about half way up the slopes. This head is eighty feet high, and is known as **Stave Island Head.** When past it, it will appear as part of Little Deer Island. **Northwest Slue.** **Stave Island.**

The northern end of Deer Isle, forming the eastern point of entrance to the Northwest Slue, is a thickly wooded head, descending on the north to a smooth, level and grassy point, from the extremity of which extends a long wharf, which is also one of the landings for the coastwise steamers.

Byard's Point, the western point of entrance to Billings' Cove, is cleared, with a group of houses upon it, and is mostly under cultivation, but dotted here and there with small groups of fir and spruce trees. It is sometimes called **Robert's Point.** On its western side makes in a small cove, with thickly wooded shores, called **The Punch-bowl**; and from this to Gray's Point, the eastern point of entrance to Buck's Harbor, the distance is two miles along a well wooded shore, which in places rises to a height of two hundred feet, and in others is of moderate height close to the beach, with steep, wooded hills behind it. **Byard's Point.**

The southern shore of the reach, from abreast of Byard's Point to its western end, is formed by Little Deer Island, which is about three miles long, and lies nearly **NW.** and **SE.** It is undulating and diversified with wooded and cleared lands, and is remarkable for a high, precipitous, rocky head rising from the middle of the island to a height of two hundred and thirty feet above sea-level, and covered only with grass. Most of the land on this island is barren and stony. About a quarter of a mile to the westward of Stave Island, and only a hundred and seventy-five yards from the northern shore of Little Deer Island, will be seen a very small, round islet, with a single tree in its centre, called Little Sally. It is directly opposite to Byard's Point, and is joined to Little Deer Island at low water. The northwestern end of Little Deer Island shows a high, grassy head, with a thin growth of birch, and is eighty feet above sea-level. The small island just to the westward of it, with a light-house and keeper's dwelling upon it, is Pumpkin Island. **Little Deer Island.** **Little Sally.**

Buck's Harbor, formed by a large cove on the northern side of the reach making to the northward between Gray's Point on the east and Condon's Point on the west, is half a mile wide at its entrance and about two-thirds of a mile long; but it is irregular in shape, and the entrance to it is diminished in width by **Buck's Island,** or **Harbor Island,** as it is sometimes called, lying exactly in the middle, with a channel on either side. This island is about forty feet high at its eastern and western ends and quite low in the middle, which is entirely bare of trees, while both ends are thickly wooded,—thus presenting a very peculiar appearance. **Buck's Harbor.**

Gray's Point, the eastern point of entrance to Buck's Harbor, is low and nearly flat, with a few trees upon it, but mostly cleared. Behind it rises what is called **Winche's Mountain,** a steep, wooded hill three hundred and twenty feet high, and composed entirely of granite. **Gray's Point.**

Condon's Point, the western point of entrance to the harbor, is a large, steep, wooded point, about two hundred feet high and tolerably bold-to. The best entrance is between this point and Buck's Island. The shores are very high, steep and mostly wooded; but in some places remarkable white, bare ledges, composed entirely of granite, crop out from among the trees. What appears to be a sort of straight white path runs from the summit of these hills down their almost perpendicular sides, and presents, when viewed from the westward, a very remarkable appearance. This is the road by which the granite is shot from the quarry to the wharf below, and is an unfailing mark for the recognition of Buck's Harbor. **Condon's Point.**

There are no dangers in the entrance to Buck's Harbor, and only one on the inside, which is called *Buck's Harbor Ledge,* and is marked by a black spar-buoy. There is good anchorage, with soft bottom, anywhere between the island and the mainland, by using the lead and being careful to keep off the shores.

On the western side of Condon's Point makes in a long, narrow cove, called **Orcutt's Harbor**, with not less than three and a quarter fathoms; and just to the westward of this is another, called **Howard's Harbor**, or **Horse-Shoe Cove**, also deep, but narrow and obstructed. The former affords excellent shelter for large vessels, but the latter is of no importance.

Pumpkin Island and Light-house. On the southwestern side of the reach, at its western end, and nearly two hundred and fifty yards from the end of Little Deer Island, will be seen a small, rocky island, with a few scrubby spruce on its southwestern end, but otherwise covered only with grass. A white light-tower and brown dwelling-house are seen on its western shore, and two long, low buildings on the shore below the light-house. This island is called Pumpkin Island, and the light-house is the guide to the western approach to Eggemoggin Reach. The light-house is a white tower, twenty feet high, and shows a fixed white light, of the fifth order of Fresnel, from a height of twenty-seven feet above the sea, visible nine miles. Its geographical position is

Latitude ..... **44° 18′ 32″ N.**
Longitude ..... **68° 44′ 34″ W.**

Birch Island. About half a mile to the southwestward of Pumpkin Island, and three hundred yards from the northwestern end of Little Deer Island, lies Birch Island, about three hundred yards in diameter, twenty feet high, and with a few trees upon it. On its southwestern side it presents a precipitous face about twenty feet high. There is a passage between it and Little Deer Island with fifteen feet, but none, except for light-draught vessels, between the latter and Pumpkin Island, although six feet at low water is carried through by those who are acquainted.

Thrumbcap Island. The main channel of the reach passes to the westward, between Pumpkin Island and a small, low islet, about one hundred yards in diameter, lying nearly one mile to the northwestward of it. This is called Thrumbcap Island, and has one or two trees; and to the southward of it, about six hundred yards distant, there is a ledge, bare at half-tide, called *Thrumbcap Ledge.*

Cape Rosier. On the northern side of the reach, about two miles and three-quarters to the westward of Condon's Point, lies Cape Rosier, the southwestern extremity of the peninsula of Brooksville and the northwestern end of Eggemoggin Reach. It is a high, rocky head, dotted with clumps of spruce and birch, but its summit is almost entirely bare. To the southward it descends to a low, flat, grassy point, bare of trees. This cape has three heads. The easternmost, just described, will show when coming through the reach from the eastward; the westernmost, which will be seen in approaching from Penobscot Bay, shows as a high, bluff head, with white rocks upon its surface here and there, and dotted with trees. The northern channel, leading from the reach into the bay, passes along the southern face of the cape, and is the one commonly used by vessels bound to the eastward from Penobscot River.

A remarkable peculiarity of Cape Rosier is *the calm streak*, or sudden calms experienced by vessels coming through the reach from the eastward with easterly or northerly winds. Although a good breeze may blow through the reach or over on the Long Island shore, dead calms are often experienced in East Penobscot Bay between the cape and the island. A vessel comes past Rosier with a good wholesail breeze and stands boldly out into the bay, perhaps intending to cross to Rockland, perhaps bound to Belfast, when suddenly the wind dies out and she is held helpless by a calm, while close under Cape Rosier, and also to the westward of her, vessels are seen standing along with a fine breeze. To avoid this calm streak, if bound to the northward, hug closely to the Cape Rosier shore until well past it, when edge over towards the middle of the bay.

When abreast of the northwestern end of Little Deer Island, the **Camden Hills** will appear in the distance to the westward; Pumpkin Island and the light-house will open from behind Little Deer Island, and gradually the main entrance will appear to the westward of Pumpkin Island and between it and Thrumbcap. Several islands will appear in this passage,—the most prominent being Birch Island, already described; and to the westward two or three islets in a group, known, respectively, as Spectacle, Pond and Hog islands.

Spectacle Island. Spectacle Island lies five hundred yards to the southeastward of Cape Rosier, on the northern side of the main channel and the southern side of the northern channel. It is low and grassy, with a few lone trees here and there, appearing like black specks on its surface, and is in reality two islets connected at low water. The southeastern point of Cape Rosier, off which this island lies, is known as **Blake's Point.**

Hog Island. Hog Island is grassy, precipitous on its eastern and southern sides, and has two or three clumps of trees on its southern end. Seen from the northward it shows a precipitous head at its eastern end, while its northwestern end is low, flat, and entirely bare of trees. There are a few trees near the eastern shore, and a barn in the middle. It lies **N NW.** and **S SE.**, and is about six hundred yards long. Off its eastern end will be seen also a rocky islet, with steep faces and bare of trees, called **Fiddle Head** or **Fiddle-Head Island**, which at low water is connected with Hog Island.

Pond Island. Hog Island is connected at low water with Pond Island, which is bare of trees and grassy except at its northwestern end, where there is a thick growth of low spruce. This end is the highest and shows precipitous faces. There is a single barn on top and two or three fish-houses on the shore. When Pond Island is viewed from the westward, however, the northwestern end shows as a white, rocky head, with a grove of spruce on its eastern face a little way south of the pitch of the head. The barn will show a little to the southward of the trees, on a cleared space, and in range with Hog Island. This island, as well as Hog Island, lies on the southern side of the main channel.

Two-Bush Island lies about a mile to the eastward of Hog Island, nearly midway between it and the northern end of Little Deer Island, and well to the southward of the channel. It is small, low and grassy, with level surface and precipitous sides, looking like a sodded earthwork; but at its northeastern end it terminates in a bare, bluff mass of rock with two spruce trees on it,—the only trees on the island. This island bears **SW.** from Pumpkin Island Light-house and **N.** by **E.** ¼ **E.** from Eagle Island Light-house. A dangerous ledge, called *Two-Bush Ledge*, lies off this island, and is just bare at low water. It may be passed on either hand, but it is usual to leave it to the southward and eastward. **Two-Bush Island.**

Three-eighths of a mile to the westward of Pond Island, still on the southern side of the passage, lies Western Island, low, rocky and bare of trees. At its western end it is about twenty feet high, and there is a single hut on its eastern side. It is about a quarter of a mile in diameter, and has several dangerous ledges near it; but there is ample beating-room, as the channel between it and Cape Rosier is over a mile wide, with from four to thirty fathoms. **Western Island.**

When past Western Island you are in Penobscot Bay, and the course may be shaped for Rockland, Belfast, Castine or Penobscot River.

DANGERS

IN APPROACHING AND ENTERING EGGEMOGGIN REACH FROM BLUE HILL BAY.

In approaching from Blue Hill Bay the first danger met with lies to the westward of Mahoney's Island, and is called Mahoney's Island Ledge. It is awash at low water, and marked by a red spar-buoy (No. 16) placed in eighteen feet water on its northwestern side. It bears from Devil's Head (on Hog Island) nearly **E SE.**, and is to be left to the northward by vessels bound through the reach from the southward, but by those who have come across Blue Hill Bay or from the Mount Desert shore it is to be left to the southward and eastward. ***Mahoney's Island Ledge.***

In standing to the westward on a wind, you must not approach Stinson's Neck nearer than a mile and a quarter; or, in other words, do not go to the westward of the eastern end of White Island bearing **NW.** by **N.** ¾ **N.**, in order to avoid the dangerous ledges lying off Stinson's Neck, of which Green Island Ledge is the southeasternmost. It is a rocky islet, surrounded by shoals; and there is one foot at mean low water about a mile and an eighth **E SE.** from the neck. There should be a buoy here, and this will be recommended. ***Green Island Ledge.***

When past buoy No. 16, the course leads between White and Hog islands, and a red and black spar-buoy will be seen to the eastward of the southern end of Hog Island. This is on Hay Island Ledge, lying about half a mile to the southeastward of Devil's Head, and having seven feet at low water. The buoy is on its western end and may be passed on either hand; but it is usual to pass to the southward of it. ***Hay Island Ledge.***

Next to the westward will be seen a red spar-buoy, which will appear in range with White Island and to the westward. This is on Eastern Half-Tide Rock, (sometimes called *Channel Rock,*) the easternmost of the Half-Tide Ledges, lying to the eastward of White Island. This rock is out only at low water, while the others of the group are out at half-tide. It is about half a mile distant from them in a **SE.** by **E.** direction, and the buoy (No. 14) is placed in thirty feet **N NE.** of it. ***Eastern Half-Tide Rock.***

Four hundred yards to the westward of this ledge, and three-eighths of a mile from the eastern end of White Island, lie the westernmost of the Half-Tide Ledges, sometimes called **The Boulders.** They cover an area about two hundred yards square, are out at half-tide, and have deep water, (not less than six fathoms on all sides of them,) so that a good unobstructed passage exists both between them and Eastern Half-Tide Ledge and between them and White Island. ***Half-Tide Ledges.***

Passing the Half-Tide Ledges, the course leads towards the eastern end of Conary's Island,—passing to the northward of it; and when past it another red spar-buoy will be seen well to the westward. This is on Conary's Ledge, bare at lowest tides, and lying **NW.** by **N.** from Conary's Island Head, distant three-eighths of a mile. The buoy (which is marked No. 12) is on its northeastern side in three fathoms, and is to be left to the southward,—being used as a thoroughfare buoy. There is, however, a good passage between it and Conary's Island, but this passage is not safe for strangers. From Conary's Ledge buoy Torry's Castle bears **NW.** by **N.** ¾ **N.**, distant one mile. ***Conary's Ledge.***

There is no safe passage between Torry's Islands and the Brooklin shore,—the space between being full of ledges and bare rocks.

When abreast of Torry's Castle a black spar-buoy will be seen to the northward. This is on Torry's Ledge, which is bare at lowest tides, and is to be left to the northeastward. The buoy is marked No. 5, placed on the western end of the ledge, and is a guide to **Centre Harbor,** at the eastern extremity of the village of Brooklin. It may be left on either hand, however, by giving it a berth. From it Cape Carter bears **N.** by **W.** ¾ **W.**, a mile and five-eighths distant. ***Torry's Ledge.***

When past Torry's Ledge, *a dangerous ledge* will be met with lying nearly in the middle of the passage, and having fifteen feet at mean low water and eleven feet at lowest tides. It bears from

Torry's Castle N. by W. Nearly, distant three-quarters of a mile; and from it Cape Carter bears N. by W. ½ W., distant a mile and a quarter. A red spar-buoy is placed to the southwestward of this ledge, but is not on the official Buoy List. The course passes to the southeastward of it, and when abreast of it beware of *another ledge, with eleven feet,* lying about S. from Cape Carter, distant five-eighths of a mile, and from the western end of Torry's Islands NW. by N. ½ N., distant a mile and three-eighths, and off Bridges' Point. It is not buoyed, but should be, and such change will be recommended. When past this ledge, and almost up with Cape Carter, another black spar-buoy will be seen to the westward off the entrance to Benjamin River. This is on Stump Cove Ledge, making off from the western point of entrance to Benjamin River in a southerly direction about eight hundred yards. The buoy, marked No. 3, is placed in thirty feet water on its southern end; and vessels must pass to the southward of it,—there being no passage between it and the northern shore. Those bound into Benjamin River pass to the eastward of this buoy.

Stump Cove Ledge.

Closson's Ledges. When past Stump Cove Ledge the next danger met with is known as Closson's Ledges, and is composed of two half-tide ledges and one bare at mean low water. The easternmost of these ledges is distant six hundred and fifty yards from shore. They are not buoyed, but always show themselves, and are not in the way except when vessels are standing to the westward on a wind.

Six hundred yards to the northwestward of Closson's Ledges lie the Tinker Ledges, bare at half-tide, lying close in with the shore of Deer Isle, a little to the eastward of its northern point. The westernmost of these ledges is known as *The Outer Tinker,* and is about a quarter of a mile from the Deer Isle shore. *The Inner Tinker* is sunken, and lies a hundred and fifty yards inshore of the outer. About three-eighths of a mile NE. from The Outer Tinker lies *a detached ledge with sixteen feet at mean low water and twelve feet at lowest tides;* which, as it is directly in the track of vessels, should be buoyed. Such change will be recommended.

Tinker Ledges.

When past the Tinker Ledges there are no more dangers in the reach until you are past Byard's Point, when a red spar-buoy (No. 10) will be seen to the westward and a little over half a mile off. This is on the northernmost of the Howard Ledges, which has three feet at low water, and is one of a group of three lying nearly N. and S. from each other. The buoy is placed in thirty feet on their northern end, and is to be left to the southwestward.

Howard Ledges.

When past the buoy on the Howard Ledges two red spar-buoys will be seen about three-quarters of a mile off, and off the northwestern end of Little Deer Island. These are on The Triangles, a group of three ledges forming a triangle, lying about a third of a mile from the Little Deer Island shore and the same distance to the northeastward of Pumpkin Island. The northernmost of these rocks has two feet at lowest tides. The eastern buoy, which is marked No. 8, is on the northern side and about fifty feet from the northern point of the ledges, in three fathoms water; and the course passes to the northeastward of it. The western buoy, which is marked No. 6, is placed on the western end of the rocks, about sixty feet from them, and in fifteen feet water. The shoal water of these ledges lies between these two buoys, and they may be passed on either hand,—that is, if the northern buoy is first fallen in with, both buoys should be left to the southward; but if the western buoy is first seen, leave both to the northward.

The Triangles.

When past the buoys on The Triangles, if bound out by the main channel the course is changed more to the westward, towards Thrumbcap Ledge, and a red spar-buoy will be seen about a third of a mile to the northwestward of Pumpkin Island. This is on Pumpkin Island Ledge, having ten feet at low water and deep water all around it. The buoy, which is marked No. 4, is in twenty feet on its northwestern end, and is to be left to the eastward, although a good channel exists between it and the island. Pumpkin Island is shoal on its northern side, *a long ledge, bare at low water,* making off from it in a NNE. direction a hundred and fifty yards, and shoal water extending a hundred and fifty yards farther to the northward from the bare ledge; so that this end of the island should not be approached nearer than four hundred yards. An iron spindle painted red and surmounted by a cage is placed on the end of the bare ledge.

Pumpkin Island Ledge.

Pulpit Ledge. Pulpit Ledge, lying inshore of Pumpkin Island, with five feet at low water, is unmarked. It bears E. by S. from the light, and takes its name from a detached rock off Little Deer Island which looks something like a pulpit.

Merriman's Ledge. About a quarter of a mile to the southwestward of the buoy on Pumpkin Island Ledge another red spar-buoy (No. 2) will be seen. This is on Merriman's Ledge, which lies about eight hundred yards W. from Pumpkin Island Light-house. It is bare a little before low water, and has deep water all around it. The buoy is placed about thirty yards to the northwestward of it in thirty feet water, and is to be left to the eastward.

Thrumbcap Ledge. Thrumbcap Ledge, sometimes called Long Ledge, (a small portion of which is always out,) lies three hundred and fifty yards S. by W. ½ W. from Thrumbcap Island and nearly opposite to Pumpkin Island Ledge. There is *a small detached ledge,* out at low water, about a hundred and fifty yards E. by S. from the dry part of the ledge, and vessels when beating must beware of it.

When abreast of Merriman's Ledge a black spar-buoy will be seen to the westward, on the northern side of the channel; and a red spar-buoy nearly opposite to it, on the southern side, and bearing about **SW.** by **W.** The former is on Spectacle Island Ledge, or *Heron Island Ledge*, as it is sometimes called, a mass of rock nearly half an acre in extent, with about five feet at low water, which lies about half a mile to the eastward of Spectacle Island and about a mile and a quarter to the westward of Pumpkin Island Light-house. The buoy is marked No. 1, and is placed in fifteen feet about thirty yards to the southwestward of the ledge. Pass to the southward of it. ***Spectacle Island Ledge.***

The red and black spar-buoy on the southern side of the channel is on Two-Bush Ledge, a detached ledge, awash at mean low water, lying off Two-Bush Island, and a little over half a mile **W NW.** from Birch Island. The buoy is on its western end, about thirty yards from it, and in three fathoms water; and from it Pumpkin Island Light-house bears **E.** by **N.** ½ **N.**, one mile distant. It is to be left to the southward; and the course continued to the westward will lead safely into Penobscot Bay. ***Two-Bush Ledge.***

Vessels coming through the reach and intending to enter Benjamin River must beware of *Stump Cove Ledge*, which is dangerous to vessels approaching Sedgwick from the westward. This ledge, as before mentioned, makes off in a **S SW.** direction from the western point of entrance to Benjamin River for about a third of a mile. On its southern end is placed a black spar-buoy, marked No. 3, in eighteen feet water; and vessels must pass to the eastward of it when bound in. When past it, there are no dangers until up with the steamboat wharf, just above which there makes out from the eastern bank of the river *a sand bar about four hundred yards long*. This is dry at low water and is then easily avoided. At high water keep the western shore close aboard. ***Dangers, Benjamin River.***

Intending to enter Buck's Harbor look out for a dangerous ledge, called *Buck's Harbor Ledge*, with two feet at low water, lying about midway between Buck's Island and the northern shore of the harbor. There is good water on all sides, and it is marked by a spar-buoy, painted red and black in horizontal stripes, placed on top of the ledge. ***Dangers, Buck's Harbor.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING EGGEMOGGIN REACH FROM BLUE HILL BAY.

When the passage between Hog and White islands bears **NW.** steer that course, nearly for the eastern end of Conary's Island. This course leads through in the best water, leaving Hay Island Ledge to the northward and Eastern Half-Tide Rock to the southward and westward. Continue the **NW.** course until you come abreast of the northern end of Hog Island and Torry's Castle bears **NW.** by **N.** ½ **N.**, distant two miles and five-eighths, when steer that course until past the buoy on Conary's Ledge, and within half a mile of the Castle, in thirteen fathoms water. Cape Carter will now bear **N.** by **W.** ½ **W.**, distant two miles and a half, and the southeastern point of Torry's Island **NE.** ¼ **E.**, distant five hundred yards. Now steer **NW.** ¾ **N.**, towards Byard's Point, passing about one hundred yards to the westward of Torry's Castle and carrying not less than four fathoms. When within half a mile of Byard's Point and abreast of the southern end of Stave Island, steer **NW.** ½ **W.** for the northeastern point of Little Deer Island until past Byard's Point and the middle of Condon's Point bears **NW.** by **N.** ½ **N.**; when steer that course, carrying not less than nine fathoms, until Pumpkin Island Light-house bears **W.** by **S.**, distant seven-eighths of a mile, and Thrumbcap Island **NW.** by **W.** ½ **W.**, distant a mile and three-eighths. Now steer **W.**, which course will lead to the southward of Spectacle Island, and to the northward of Pond and Western islands, into Penobscot Bay.

The above courses pass to the southward of Hay Island Ledge; to the northeastward of Eastern Half-Tide Rock; three hundred yards to the northeastward of Conary's Ledge; about one hundred yards to the westward of Torry's Castle; six hundred and fifty yards to the southwestward of Torry's Ledge; nearly half a mile to the southwestward of Stump Cove Ledge; about six hundred yards to the northeastward of The Outer Tinker; one hundred and twenty-five yards to the northward of Howard Ledges; the same distance to the northward of the northern Triangle Ledge buoy; an eighth of a mile to the northward of Pumpkin Island Ledge; a third of a mile to the southeastward of Thrumbcap Ledge; a quarter of a mile to the northward of Merriman's Ledge; one hundred yards to the southward of Spectacle Island Ledge; and over five hundred yards to the northward of Two-Bush Ledge.

Not less than four fathoms at low water can be taken through the reach on the above courses,—soundings varying from four to eleven fathoms.

Sailing Directions---Eggemoggin Reach.

On the above courses, to enter Benjamin River: Continue on the course **NW.** ¾ **N.**, from abreast of Torry's Castle, until the end of the steamboat wharf on the western bank of the river bears **N.** by **E.** ¼ **E.**, when steer that course, which will lead with not less than three and a half fathoms up to the entrance. When in the river follow the buoys up to the wharf, where anchor in five fathoms, soft bottom. Wishing to pass into the Inner Harbor, when abreast of the steamboat wharf haul to the westward, steering about **N.** by **E.** to avoid the bar, and anchor at pleasure.

These courses pass half a mile to the eastward of the black buoy on Stump Cove Ledge and carry not less than twelve feet into the Inner Harbor.

To enter Billings' Cove: When off the entrance to Northwest Slue and the highest part of Stave Island Head bears **W.** ⅞ **N.**, steer **N.** by **W.** up the middle of the cove, anchoring according to draught.

To enter Buck's Harbor: When, on the **NW.** by **N.** ½ **N.** course, Pumpkin Island Light-house bears **W.** by **S.**, and you are past the Triangle buoys, steer **N.** by **W.** ⅝ **W.**, if wishing to pass to the westward of Buck's Island; or, if wishing to enter by the eastern channel, as soon as the eastern end of Buck's Island bears **NE.** by **N.** ½ **N.**, steer **NE.** ¾ **N.**, anchoring according to draught. As soon as the inner harbor is open, round Buck's Island to the northward, keeping about the middle of the passage, (leaving the buoy on Buck's Harbor Ledge to the southward,) and anchor at discretion. This is an excellent harbor, sheltered from all winds.

Coming from the Westward, bound into Eggemoggin Reach: When off the southern end of Long Island, and between it and North Haven, a **NE.** ½ **N.** course will lead up to the western entrance to the reach.

LIGHT-HOUSES.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Eggemoggin Light-house	44 14 54	68 29 52	4 33 59.5	Fixed.	26	9
Pumpkin Island Light-house	44 18 32	68 44 34	4 34 58.3	Fixed.	27	9

TIDES.

Corrected Establishment at Naskeag Harbor	11h 12m
Mean Rise and Fall of tides	9.0 ft.
Mean Rise and Fall of Spring tides	9.8 ft.
Mean Rise and Fall of Neap tides	8.2 ft.
Mean duration of Rise	6h 20m
Mean duration of Fall	6h 5m
Rise of highest tide observed	10.0 ft.

VARIATION OF THE COMPASS.

The magnetic variation for 1879 is 15° 39′ W., with an approximate annual increase of 2′.

DEER ISLAND THOROUGHFARE.

Next in importance to Eggemoggin Reach, of the different passages connecting Blue Hill and Penobscot bays, is Deer Island Thoroughfare, skirting the southern shore of Deer Isle, (beginning at Stinson's Neck on the east,) and joining Penobscot Bay at the southwestern end of Deer Isle. The whole length of the Thoroughfare is a little over six miles, and its width varies very much,—the narrowest part being abreast of Green's Head, where it is a little over two hundred yards wide, and the widest near its eastern end, between Lazygut Islands and Eastern Mark Island, where it is seven-eighths of a mile in width.

This Thoroughfare is protected on the south by the numerous islands studding the whole space between Deer Isle and Isle au Haut. Their name is legion, and it would be impossible to give an intelligible description of them all. Only such will be described, therefore, as lie in the Thoroughfare or form its immediate boundaries. As before mentioned, the easternmost point of entrance is Stinson's Neck, or **Green Island**, as it is sometimes called; for although it is generally considered a part of Deer Isle, it is in reality separated from it by Southeast Harbor and its various entrances. It is of moderate height, tolerably well settled, and in most places thickly wooded. Its shores are much cut up by coves, some of which, especially on the southern side, afford anchorage for small vessels. Of these the most important is **Conary's Cove**, making in at the southeastern extremity of the neck. It is about half a mile long, and affords good anchorage for vessels of moderate draught. It is, however, obstructed by several ledges, bare at half-tide and low water, lying off its mouth.

Stinson's Neck.



Entrance to Deer Island Thoroughfare from the Eastward. Eggemoggin Lt.Ho. bearing N.by E.¼ E.distant 4 Miles,and Devil's Head N.by W.¼ W.distant 2½ Miles.



Entrance to Deer Island Thoroughfare from the Westward, Mark Island Lt.Ho. bearing E.by S.distant 2 Miles.Eagle Island Lt.Ho.N.distant 4½ Miles.

Coming from the eastward, through Blue Hill Bay, Stinson's Neck will be easily recognized as the high, thickly wooded head, (first to the westward of Naskeag Point,) off which lie a couple of islets close together,—the southernmost of which is thickly wooded; the other, small, and composed of white rock, with a grove of trees on its southeastern end. These are the **Lazygut Islands**, marking the northern side of the eastern entrance to the reach. They lie on the northern side of the passage and have many ledges close to them; but most of these are out at low water. **Lazygut Islands.**

When past these islands, the wide passage opening to the northward between Stinson's Neck and Deer Isle is the entrance to Southeast Harbor or Oceanville. It is over three-quarters of a mile in width between Stinson's Neck and Sheep Island, which marks the western point of entrance.

Sheep Island lies about half a mile to the eastward of the Deer Isle shore and one mile **W.** from Lazygut Islands. It extends **NW.** by **W.** and **SE.** by **E.**, is nearly eight hundred yards long, and has an average width of three hundred and fifty yards. It is high, thickly wooded, and surrounded by ledges, most of which are out at low water. About two hundred and fifty yards to the westward of its western end lies a very small rocky island with a few fir trees upon it, also surrounded by ledges. This is called **Little Sheep Island.** **Sheep Island.**

On the southern side of the passage the first island met with is nearly abreast of the Lazygut Islands, bearing from the easternmost **S.**, distant seven-eighths of a mile. It is about twenty feet high, two hundred yards long **N.** and **S.**, and is composed of white rock and thinly wooded. A ledge, bare at half-tide, lies about one hundred yards to the northward of it, and another about six hundred yards to the eastward, neither of which is buoyed.

Next to the westward, on the southern side of the channel, and bearing from the easternmost of the Lazygut Islands **SW. ½ W.**, distant seven-eighths of a mile, lies Eastern Mark Island, sometimes called **The Dumpling.** It is about forty feet high, three hundred yards long **NW.** and **SE.**, and is composed of white rock thicky covered with stunted fir and spruce. A ledge, bare at half-tide, lies about one hundred yards to the southward of it; and a sunken ledge, nearly four hundred yards to the northward of it, (called **Eastern Mark Island Ledge,**) is marked by a spar-buoy painted red and black in horizontal stripes. **Eastern Mark Island.**

The passage between Eastern Mark Island and Sheep Island is over three-quarters of a mile wide, but the channel is very much contracted by the ledges with which it is studded. Of these the largest and most important is Shelldrake Rock or **Eastern Yellow Rock,** which is always out,—being, in fact, a very small island of a peculiar whitish color, lying nearly in the middle of the passage, about six hundred yards to the southeastward of Sheep Island, nearly half a mile **NW. ¼ W.** from Eastern Mark Island, and on the northern side of the channel. About three hundred and fifty yards to the southeastward of it lies a small ledge, bare at three-quarters ebb, called **The Haycock,**—the channel passing between the two. **Shelldrake Rock.**

When abreast of Sheep Island, (after having passed between Eastern Yellow Rock and The Haycock,) you will pass well to the northward of a large mass of rock with two small knubbles, always out, lying nearly midway between Eastern Mark Island and Bold Island,—bearing **W.** by **S.** from the former and **E.** by **N.** from the latter. These are called Clam Islands or the **Clam Ledges,** and must not be closely approached by vessels beating through the passage. **Clam Islands.**

Off the southern side of Sheep Island, about a quarter of a mile distant, lies another small white rock, which at low water forms a large ledge, and is called Sheep Rock. About six hundred yards to the southwestward of it, and on the northern side of the channel, lies a half-tide ledge, called **Haskell's Ledge,** marked by a **black spar-buoy.** **Sheep Rock.**

Bold Island is the next island met with, and is on the southern side of the passage. It will appear high, round and smoothly sloping, dotted with a scrubby growth here and there, but on its western side mostly bare. It lies nearly **E.** and **W.**, is about five hundred yards in diameter and one hundred feet high. A dangerous ledge, called **Bold Island Ledge,** lies off its northern shore at a distance of three hundred and fifty yards, and is marked by a red spar-buoy. **Bold Island.**

On the northern side of the passage, opposite to Bold Island and about eight hundred yards from it, lies Grog Island, a barren islet of white rock, dotted here and there with a few scrubby trees. It lies **N NW.** and **S SE.** and is about two hundred and fifty yards long. It is not safe to pass to the northward of this island, as there is a ledge, called **Grog Island Ledge,** a little over three hundred yards **NW.** from it; and a line of ledges extends along the southeastern shore of Deer Island, from Webb's Cove towards Little Sheep Island, at distances varying from two hundred and fifty to three hundred and fifty yards from shore. These latter are called **Buckmaster's Ledges.** **Grog Island.**

Passing to the westward of Grog Island, the entrance to Webb's Cove is opened, which affords good anchorage for vessels detained by adverse winds or weather. The entrance is between Grog Island and a very small, bare, rocky island called **Humpkin's Island,** and is about eight hundred yards wide. The cove is obstructed only by a single small, bare rock, called **Channel Rock,** lying exactly in the middle of its mouth. It may be safely entered by passing to the westward of this rock. **Webb's Cove.**

Passing to the westward of Bold Island you will open, about half a mile to the southward, a high, rocky island, partly wooded and partly grassy, called Devil's Island. Its eastern end terminates in a wooded head one hundred and twenty feet high, and there is no passage between it and Bold Island. **Devil's Island.**

Camp Island lies next to the westward of Bold Island, from which it is distant half a mile. It lies on the southern side of the passage, extends **NE.** and **SW.**, and is half a mile long. Seen from the eastward it appears rocky, of moderate height, gently rising to a wooded summit, but its slopes are bare of trees or covered only with a thin growth of scrub. Seen from the westward it will appear wooded. On its southwestern side it is joined at low water to a small island, twenty feet high and thickly wooded, called **Little Camp Island.** A narrow passage with three and a half fathoms exists between this and Bold and Devil's islands, but is obstructed by an islet about one hundred yards in diameter.

Camp Island.

Russ' Island. Seven hundred and fifty yards to the westward of Camp Island lies Russ' Island, also on the southern side of the Thoroughfare. It lies nearly **E.** and **W.**, is about seven hundred yards long; and, seen from the eastward, will appear as a high, grassy hill, about eighty feet high, with a thick growth of scrubby trees clinging to its northern slopes. The western end of the island is lower, more gently sloping, and has a couple of houses with out buildings near the shore.

The northern shore of the Thoroughfare, from abreast of Russ' Island to its western end, is formed by the southern shores of Deer Isle, which present an undulating, hilly surface, in some places steep, in others gently sloping, and varying in height from forty to one hundred feet. For the most part this shore is thickly wooded, but there are occasional cleared lands, and a small settlement at Green's Landing in the vicinity of the granite quarries. On this shore, opposite to Russ' Island, the dangerous **Dow Ledges** make off to the southward to a distance of over three hundred yards. Some of them are always out; but there are others, outside of the bare rocks, which are not out before low water. It is therefore necessary to give them a berth. The channel is here very much contracted,—being not much over two hundred yards wide.

Deer Isle.

Four hundred yards to the westward of Russ' Island lies Round Island, a bold, rocky islet, about thirty feet high, with a thin, scanty growth of spruce and fir upon it. It lies in a **NE.** and **SW.** direction, and is about two hundred and fifty yards long. On coming up with this island the settlement of **Green's Landing,** on the northern shore of the Thoroughfare, will be seen, lying along the northern side of a cove of irregular shape on the southern shore of Deer Isle, in which there is good anchorage with not less than three fathoms water. This cove is about seven hundred yards wide, but the anchorage is very much contracted by a great mass of ledges and bare rocks which lie in a line up and down the middle of the cove, and restrict vessels, in anchoring, to the western side, under Green's Head,—a steep, rocky bluff, forming the western point of entrance to Green's Landing. It is one hundred and twenty feet high and covered with a thick growth of scrubby trees. The name, "**Green's Landing,**" is painted in large letters on the rocks on the southern side of the head.

Round Island.

Green's Head.

Two-Bush Islands. Opposite to Green's Head, on the southern side of the passage, lie three small islands. The two easternmost, which are joined at low water, are called Two-Bush Islands from the circumstance that the easternmost and largest has two small spruce trees on its summit. The other is bare, and both are surrounded at low water by ledges. The westernmost of the three islets, called **Thurlow's Knob,** is about twenty feet high, rocky and wooded; and lies off the northeastern point of Thurlow's Island, with which it is connected at low water.

Thurlow's or **Crotch Island,** forming the southern shore of the Thoroughfare from abreast of Green's Head to the western end of Moose Island, is a large, high island, about two-thirds of a mile long in an **E.** and **W.** direction, and for the most part wooded. When seen from the eastward it shows two steep, bluff, rocky heads, thickly covered with trees, lying nearly **N.** and **S.**, with low, level and cleared land between them. The southern head is the largest and highest, and is called **Thurlow's Head.** Between the two a long, narrow cove, called **Mill Cove,** penetrates to the middle of the island, affording shelter to vessels of very light draught, although its entrance is almost closed at low water. On the northern side this island appears to be formed by three round hillocks, with low land between them. The two easternmost are steep, high and wooded, and have cleared, cultivated and settled land between them. The westernmost is more gently sloping, has a thin and scattered growth, and between it and the middle hill the land is densely wooded.

Thurlow's Island.

Off the northern shore of Thurlow's Island, about midway between its eastern and western ends and about seventy-five yards from shore, lies a rock, bare at low water, called **Crotch Island Ledge.** The channel at this point divides,—one part, called the **North Channel** or **Indian Narrows,** leading close under the southern shore of Moose Island, with seven feet at mean low water; and the other, called the **South Channel,** keeping nearly the middle of the passage, with fifteen feet.

Allen's Cove. Allen's Cove is the large cove on the northern side of the Thoroughfare, which is fully open when abreast of Crotch Island Ledge. It is about five hundred yards long in a **N.** by **E.** direction, and is formed by the Deer Isle shore on the east and the eastern shore of a low, partly cleared and partly wooded island, called **Moose Island,** on the west. There is good anchorage for any vessel that can pass through the Thoroughfare.

Moose Island. Moose Island, lying on the western side of Allen's Cove, is about six hundred yards long **E SE.** and **W NW.**, quite low and nearly level. The western part is pretty thickly wooded, but at its eastern end it is bare of trees and rocky. On this cleared space there are several houses and a wharf belonging to the granite quarries. At low water Moose Island is connected with Deer Isle by a causeway a little over one hundred yards long.

Two hundred and fifty yards to the southward of the western end of Moose Island lies a round, bare rock, about five feet out at high water, called **Yellow Rock.** A long ledge, almost awash at low water, makes off from it in a westerly direction, and is not buoyed. It is called **Yellow Rock Ledge.**

The Balls.

On approaching Thurlow's Island from the westward two peculiar round boulders will be seen close together off its western end, and about one hundred yards from high-water mark. These are very noticeable, and are called The Balls.

When abreast of Yellow Rock, the western entrance to the Thoroughfare will be seen about one mile to the westward, with Andrew's Island on the northern side and Mark Island on the southern.

Andrew's Island.

Andrew's Island lies about two-thirds of a mile to the westward of Moose Island, and is about sixty feet high, with gently sloping shores, composed of white rock, dotted with stunted firs and a few spruce. It lies nearly **E.** and **W.** and is a little over three hundred and fifty yards long.

Mark Island.

Mark Island, lying a little over half a mile **S.** by **W.** ½ **W.** from Andrew's Island, is small, of oval shape, between two and three hundred yards long, and composed of yellow rock, with a thick growth of scrubby fir and spruce upon its surface. Its southern end is the highest and has the thickest growth; and the precipitous rocks which descend from the base of the trees to the water form a sort of bluff head. On its northern side the rocks are worn quite smooth by the action of the sea. At its western end, about midway between its northern and southern shores, stands a square, white light-tower, with the keeper's dwelling close to it on the southern side. This is called Mark Island Light-house, and sometimes **Deer Island Thoroughfare Light-house.** The former, however, is the name commonly used. This light-house is a square, brick tower, whitewashed, twenty-five feet high, showing a fixed white light, of the fourth order of Fresnel, from a height of fifty-two feet above the sea, visible twelve miles. Its geographical position is

Mark Island Light-house.

Latitude	44° 8′ 3″ N.
Longitude	68° 42′ 12″ W.

Approaching Mark Island from the eastward, you will pass to the northward of a very small, white, rocky island lying about a quarter of a mile to the southward of the eastern end of Andrew's Island. This is called **Western Deer Island Ledge.** There are also several bare ledges and islets between Mark Island and Thurlow's Island.

Scraggy Island.

To the southwestward of Mark Island, distant about half a mile, and nearly abreast of Mark Island Ledge buoy, lies Scraggy Island,—low and rocky, with a sparse and stunted growth of fir and spruce upon it. It extends **NW.** and **SE.**, and its southeastern end is a mere bare rock, destitute even of moss. The course passes to the northward and westward of it.

When past Mark Island and in East Penobscot Bay, you may shape the course to the northward, steering about **N.** ¼ **W.** towards Eagle Island; or pass to the westward, steering about **W.** ½ **N.**, and go through Fox Islands Thoroughfare into West Penobscot Bay. (The latter is the course usually pursued by coasters.) Or you may cross the bay to the southward of the Fox Islands, steering about **S SW.** nearly for Saddle-back Ledge.

Approaching Deer Island Thoroughfare from the westward, the following description of the approaches will be found of service in enabling strangers to recognize the entrance:

The course from Fox Islands Thoroughfare is about **E.** ¼ **S.**, and when clear of it the western shore of Deer Isle will appear nearly ahead, partly cleared and cultivated and partly wooded, of moderate height, and fringed with whitish and reddish rocks. The high land of Mount Desert will be seen over this island almost directly ahead, and in range with the western end of the Thoroughfare. Over the northern part of Deer Isle, and to the northeastward, a high, round hill, with bare summit, will appear. This is **Blue Hill.** The light-house on Mark Island will be seen as if in the middle of the island, with a brown dwelling-house close to it; and well to the southward of this Isle au Haut will appear as a large, very high island, with three peculiar peaked hills near its northern end. On approaching Mark Island several bare rocks and islets will be seen on the southern side of the channel. The westernmost of these, which is the largest and most important, is known as **The Brown Cow.** It is about ten feet out at low water, and at high tides is nearly covered. Neither The Brown Cow nor any of the other rocks near it are dangerous, except to vessels standing to the southward on a wind.

DANGERS

IN PASSING THROUGH DEER ISLAND THOROUGHFARE FROM BLUE HILL BAY.

The name **Jericho Bay** is sometimes given to that portion of the western part of Blue Hill Bay contained between Stinson's Neck on the north and Isle au Haut, Burnt-Coat and Marshall's islands on the south. It is in reality not a bay, but a sound, full of islands and ledges, and dangerous for navigation except by the established channels. Coming through it, to enter Deer Island Thoroughfare, there are two commonly used passages;—one between Smutty-nose and Mahoney's Island and the other between Mahoney's and Calf islands. The latter is the better, wider and least obstructed; but the former is most frequently used.

Mahoney's Island Ledge.

Intending to pass between Smutty-nose and Mahoney's islands; when you come abreast of Naskeag Point a red spar-buoy will be seen ahead, bearing about **SW.** ¾ **W.** and about five-eighths of a mile off. This is on the northern side of the western end of Mahoney's Island Ledge. There are two distinct ledges to the westward of the island with good channels and deep water on all sides, and both should be buoyed for the convenience

Dangers—Deer Island Thoroughfare. of coasters who may wish to pass between them. The easternmost ledge is bare at its southern end and has eight feet at its northern end, lies nearly N. and S., and is over three hundred yards long. From the northern end of Mahoney's Island the bare rock is distant a little over a quarter of a mile, SW. ¼ W.; and the channel between it and the island is three hundred yards wide, unobstructed, and has from three to five fathoms at low water. The westernmost ledge is three hundred yards to the westward of the eastern rock, and the unobstructed channel between them has from three to six fathoms. The ledge is about an eighth of a mile long N NW. and S SE., has five feet at its southern end and seven at its northern end. Off this northern end, in eighteen feet, is placed the buoy marked No. 16, bearing from the northern end of Mahoney's Island W. by S. ½ S., distant nearly half a mile. The course passes to the

Hay Island Ledge. northward of it; and you must look out on the northern side of the channel for Hay Island Ledge, already described on page 171, and marked by a spar-buoy painted red and black in horizontal stripes. This ledge lies SE. by S. from Devil's Head on Hog Island,—its southern end being distant half a mile from the head; and from the red buoy on Mahoney's Island Ledge it bears W. by N. ¾ N., distant a little over half a mile. It has twelve feet at mean low water (seven at lowest tides) on its southern end, and fifteen feet (ten at lowest tides) on its northern end; and there is a good channel three hundred yards wide between it and Hog Island, with not less than four fathoms. It is usual, however, to pass to the southward.

When past Mahoney's Island Ledge buoy the course turns to the southwestward and there is nothing in the way unless you are beating; when you must look out, on the eastern

Sunken Egg Rock. side of the passage, for Sunken Egg Rock, already described on page 161 as a sunken ledge with eight feet at mean low water, lying nearly half a mile SW. by S. from Egg Rock, with a six fathom channel between them. A spar-buoy, painted red and black in horizontal stripes, is placed about one hundred yards to the northeastward of the shoal of the rock in twenty feet water. To avoid this ledge do not stand farther to the eastward than to bring Mahoney's Island to bear N NE.

On the western side of the passage look out for Green Island Ledge, that great mass of bare rocks and shoal ground lying from half a mile to a mile and a quarter E SE. from the southern extremity of Stinson's Neck,—the dry part bearing from Crow Island S. ½ E., distant half a mile. Between the

Green Island Ledge. lines of three fathoms the shoal ground covers an area about twelve hundred yards square, with soundings over it varying from one to twelve feet. At its eastern extremity it has one and a half feet; at its southeastern end two feet; at its western end four feet, and at its northern end it is bare. A channel one hundred yards wide, with not less than eighteen feet at low water, leads along the northern side of the ledge, between it and Crow Island; and a red and black spar-buoy is placed off this northern end to mark *Rudder Rock*, a detached rock off the southern end of Crow Island with three feet at low water. This buoy is in Lazygut Channel; and strangers must not attempt to go through on this side.

Five-eighths of a mile SE. from the dry part of Green Island Ledge, and a little over a mile W. by N. from Egg Rock, is *an eleven feet rock*, surrounded by deep water. It is entirely detached, about fifty yards in diameter, and should be buoyed. The course towards Long Ledge buoy passes a quarter of a mile to the southward of it.

Long Ledge, or *Mansfield's Ledge*, as it is sometimes called, is the next danger met with, and is marked by a black spar-buoy (No. 9) which will be seen, when off Green Island Ledge,

Long Ledge. bearing about W. ½ S., distant three-quarters of a mile. It lies half a mile to the southward of the dry part of Green Island Ledge and nearly three-quarters of a mile E SE. from Lazygut Island, is bare at half-tide to the extent of an eighth of a mile, and has many outlying ledges. Vessels may pass between it and Green Island Ledge; but it is usual to pass to the southward of it.

When past Long Ledge, and approaching Lazygut Islands, a black spar-buoy will appear to the southward of the eastern end of the islands. This is on Lazygut Ledge, a small detached ledge about five hundred yards S. from the eastern end of the islands and having six feet at lowest

Lazygut Ledge. tides. There is good water on all sides, but it is usual to pass to the southward of it. The buoy is marked No. 7, and placed in three fathoms close to the rock, on its southern side. When past it, a red and black spar-buoy will be seen on the northern side, about a mile distant, and another nearly ahead, or a little to the southward, at about the same distance. The former is in the entrance to Southeast Harbor and on *The Boat* or *Channel Rock*, which has

Eastern Mark Island Ledge. three feet at low water. It is not in the way of vessels passing through the Thoroughfare. The latter is on Eastern Mark Island Ledge, which has eight feet at low water, and lies about three hundred yards to the northward and westward of Eastern Mark Island. There is good water all around it, but it is usual to pass to the northward of it.

When abreast of Eastern Mark Island Ledge a red spindle surmounted by a cage will appear nearly ahead, about six hundred yards off. This is on Haycock Rock, or *The Haycock*,

Haycock Rock. sometimes called *Bunker's Slippery Rock*,—a small detached rock, three feet out at low water, lying a little over six hundred yards W. by N. ½ N. from Eastern Mark

Island, on the southern side of the channel. The spindle is placed on the rock, and the channel lies between it and a large white rock about four hundred yards **NW.** by **N.** from it, called **Eastern Yellow Rock.** (See page 175.)

When abreast of the buoy on The Haycock a black spar-buoy will be seen on the northern side of the channel. This is on White Rock, which lies about **S.** by **W.** from Sheep Island, and has three feet at low water. The buoy is marked No 5, and is placed in eighteen feet water to the southward of the rock. When up with it, another black spar-buoy will appear to the northward of the course, a little less than half a mile off, and two rocky islets on the southern side of the channel, bearing about **SW.** from the buoy on Haycock Rock, distant half a mile. These are the Clam Ledges, or **Clam Islands,** as they are sometimes called, which lie nearly in a line between Eastern Mark and Bold islands, distant from the former five-eighths of a mile and from the latter three-quarters of a mile. The course passes well to the northward of them.

White Rock.

Clam Ledges.

The black spar-buoy on the northern side of the channel is on Haskell's Ledge, bare at low water, which lies a little over half a mile **S.** by **W.** ¾ **W.** from the western end of Sheep Island and two-thirds of a mile **NE.** ¼ **N.** from the centre of Bold Island. The buoy is marked No. 3, and placed in fifteen feet water on its southern side. There is good water on all sides of the rock by giving it a berth.

Haskell's Ledge.

Passing Haskell's Ledge, a red spar-buoy will be seen off the northern shore of Bold Island. This is on *Bold Island Western Ledge,* bare at low water, and nearly two hundred yards long in an **E.** and **W.** direction. It lies about three hundred and fifty yards off the northern shore of Bold Island, and at the highest tides has only four or five feet water over it. The buoy is marked No. 8, and placed in twenty-five feet on the northern side of the ledge. *Bold Island Eastern Ledge* is a little over a quarter of a mile **E.** by **N.** from the western ledge, and is out at lowest tides. It covers an area about one-eighth of a mile square and is not buoyed. The sailing-line, however, passes two hundred yards to the northward of it, and also about two hundred yards to the northward of the red buoy on the western ledge, in order to avoid *an eleven feet rock* one hundred yards to the northward of the buoy. When past this buoy there will be a clear channel until nearly up with Humpkin's Island, when you must not app oach that island nearer than three hundred yards, to avoid *a dangerous rock, bare at spring tides,* lying two hundred yards **S.** by **W.** from the island, and not buoyed. The sailing-line passes two hundred yards to the southward of it. When up with Russ' Island, a red spar-buoy will appear about a hundred and seventy-five yards off its northern shore. This is on Roebuck Ledge, sometimes called *Russ' Island Ledge.* It is out at lowest tides and is quite bold-to. The buoy, which is marked No. 6, is placed on its northern side in eighteen feet water, and is to be left to the southward.

Bold Island Ledges.

Roebuck Ledge.

In passing Roebuck Ledge keep the southern side of the channel rather more aboard, especially if the wind is scant on the port tack, in order to avoid the dangerous Dow Ledges, on the northern side of the channel,—a group of bare rocks, surrounded by ledges bare at low water, extending off from the southern shore of Deer Isle towards Russ' Island about three hundred and fifty yards. At low water they are easily avoided, but at high water the southernmost of the bare rocks should not be approached nearer than a hundred and fifty yards.

Dow Ledges.

When past Dow Ledges and Roebuck Ledge, a black spar-buoy will be seen about half a mile to the westward. This is on Staples' Ledge, a detached ledge about an eighth of a mile to the southward of **Staples' Point,** (the eastern point of entrance to Green's Landing,) with two feet at lowest tides. It is between five and six hundred yards to the northward and westward of Round Island, which distance is here the width of the channel. The buoy is marked No. 1, and placed in three fathoms on the southern side of the rock.

Staples' Ledge.

When past Staples' Ledge and approaching Thurlow's Knob, keep the northern shore aboard in order to avoid Thurlow's Rock, with eight feet at mean low water, lying about eighty yards **NW.** ½ **W.** from the Knob. When past it the channel is clear until up with Allen's Cove, when a red and black spar-buoy will appear on the northern side and a red spar on the southern side of the channel. The former is on Gangway Rock, lying about one hundred yards to the southward of the eastern end of Moose Island, and may be passed on either hand. The usual channel is, however, to the southward of it. The buoy is placed about forty yards to the northward of the rock, and is intended to mark the **North Channel,** or **Indian Narrows,** as it is often called, leading between this buoy and Moose Island with seven feet at mean low water.

Thurlow's Rock.

Gangway Rock.

Vessels wishing to pass through the South Channel must give the buoy on Gangway Rock a berth and keep close to the red buoy on the southern side of the passage, which is on Crotch Island Ledge, bare at low water, lying about seventy-five yards off the northern shore of Crotch Island and nearly midway between its eastern and western ends. The buoy, which is marked No. 4, is placed on the northern side in about fifteen feet water, and is to be left to the southward. Fifteen feet at mean low water may be taken through the

Crotch Island Ledge.

South Channel, leaving this buoy to the southward and Gangway buoy well to the northward. This is the narrowest and shoalest part of the channel. When past it, a round, bare rock will be seen to the westward, about a quarter of a mile distant, and off the western end of Moose Island. This is **Yellow Rock**, and vessels in standing to the northward on a wind must be careful to give it a good berth to the eastward to avoid Yellow Rock Ledge, a long ledge, almost awash at low water, making off from the rock in a westerly direction towards Andrew's Island. It is not buoyed or marked in any way, but at low water is easily avoided.

Yellow Rock Ledge.

Field Ledge. When past Yellow Rock, a red spar-buoy will appear on the southern side, about seven hundred yards off, and in range with Mark Island. This is on Field Ledge, awash at low water, which lies on the southern side of the channel, with good water on all sides, and bears from Mark Island Light-house **E NE.**, a little over half a mile distant. The buoy is on its northern side, is marked No. 2, and is to be left to the southward.

Mark Island Ledge. When past Field Ledge and approaching Mark Island, a black spar-buoy will be seen to the westward, a little over half a mile distant. This is on Mark Island Ledge, sometimes called *Bay Ledge*, a detached rock about thirty yards long, which lies **NE.** and **SW.**, and has four feet at lowest tides. It may be passed on either hand, but it is usual to pass to the southward of it. The buoy is marked No. 1, and placed in four fathoms on its southern side.

SAILING DIRECTIONS

FOR PASSING THROUGH DEER ISLAND THOROUGHFARE FROM BLUE HILL BAY.

I. ***By the passage between Smutty-nose and Mahoney's islands.***—Bring the western end of Mahoney's Island to bear **S.** by **W.** ½ **W.**, and steer for it until within six hundred yards of it and Naskeag Point bears **NW.** by **N.**, distant a little over half a mile. Here there will be five fathoms, and **SW.** by **W.** ¼ **W.** will lead safely through the passage between Smutty-nose and Mahoney's islands, passing to the northward of Mahoney's Island Ledge. On this course, when the eastern end of Harbor Island bears **N.** by **E.** ¼ **E.** and Devil's Head **NW.**, steer **S.** by **W.** ¼ **W.**, carrying not less than six fathoms, until the bare part of Green Island Ledge bears **NW.** and the middle of the easternmost Lazygut Island **W.** by **N.** ½ **N.** Now steer **W.** ¼ **S.**, passing to the southward of the buoy on Long Ledge. When abreast of this buoy steer **W.** by **N.** ½ **N.**, which will lead about one hundred yards to the southward of the buoy on Lazygut Ledge; and when abreast of this buoy steer **W.** ¼ **S.** until up with the horizontally-striped buoy on Eastern Mark Island Ledge and the highest part of Eastern Mark Island bears **S SE.** This will lead about one hundred yards to the northward of the ledge. When abreast of it steer **W.** by **S.**, which course leads between Eastern Yellow Rock and The Haycock, and through the middle of the passage in the best water up to Russ' Island. When the eastern extremity of Russ' Island bears **SW.** ¼ **S.**, about two hundred and fifty yards off, and Green's Head bears **W.** by **N.**, steer the latter course until within two hundred yards of the head, with Mark Island Light-house bearing **W.** by **S.** ½ **S. Southerly**; when steer **W.** by **S.** ¼ **S.** through the South Channel, carrying not less than fifteen feet at low water. This course continue until abreast of Mark Island Light-house, when steer **W SW.** until past Scraggy Island, leaving Mark Island Ledge to the northward. When past the island, the course for Fox Islands Thoroughfare is **W.** ¼ **N.**, and the course for Eagle Island Light-house about **N.** ⅛ **W.**

The above courses pass nearly two hundred yards to the northwestward of the buoy on Mahoney's Island Ledge; three-eighths of a mile to the southeastward of the eastern end of Green Island Ledge; three-quarters of a mile to the northwestward of the buoy on Sunken Egg Rock; one hundred yards to the southward of the buoy on Long Ledge; about one hundred yards to the southward of Lazygut Ledge; one hundred yards to the northward of Eastern Mark Island Ledge; a hundred and fifty yards to the southward of the dry part of Eastern Yellow Rock; two hundred yards to the northward of The Haycock; a little over one hundred yards to the southward of the buoy on Haskell's Ledge; two hundred yards to the northward of Bold Island Ledge; a hundred and twenty-five yards to the southward of the southernmost of the Dow Ledges; about seventy-five yards to the northward of the buoy on Roebuck Ledge; nearly one hundred yards to the southward of the buoy on Staples' Ledge; one hundred yards to the northward of Thurlow's Rock; about thirty yards to the northward of the buoy on Crotch Island Ledge; eighty yards to the southward of the Gangway buoy; seventy-five yards to the northward of the buoy on Field Ledge; and well to the southward of the black buoy on Mark Island Ledge. Not less than fifteen feet at mean low water will be found on the above courses, and that only on the bar between Crotch and Moose islands.

II. ***Intending to pass between Mahoney's and Calf islands.***—Pass between Calf and Mahoney's islands, steering about **SW.** ½ **W.** and carrying not less than five fathoms, until the dry part of Green Island Ledge bears **NW.** and the middle of the easternmost Lazygut Island **W.** by **N.** ½ **N.** Now steer **W.** ¾ **S.** and follow the directions given above. ***Sailing Directions--Deer Island Thoroughfare.***

III. ***There is still another channel, called Lazygut Channel,*** which leads from Mahoney's Island across the entrance to Eggemoggin Reach towards Crow Island,—passing to the southward of that island and to the northward of Green Island Ledge and Lazygut Ledge. This channel is never used by strangers, and is obstructed by a dangerous sunken ledge with three feet at low water, called *Rudder Rock.* (See also pages 161 and 162.) This rock lies **S SE.** from Crow Island about two hundred yards, and is marked by a buoy painted red and black in horizontal stripes. Vessels must pass to the southward of it.

To pass through this channel from the Eastward.—On the **SW.** by **W.** ¼ **W.** course between Smutty-nose and Mahoney's islands, when past Mahoney's Island Ledge buoy and Devil's Head bears **NW.**, steer **SW.** by **W.** until the dry part of Green Island Ledge bears **S.** ½ **E.** and the southern extremity of Stinson's Neck **W.** Steer the latter course for an eighth of a mile until the southern end of Lazygut Island bears **SW.**, when steer **SW.** ¼ **S.**, carrying not less than fifteen feet, until the eastern end of the eastern Lazygut Island bears **N.** by **E.** ¼ **E.** and you are about midway between it and the black buoy on Lazygut Ledge. Now steer **W.** by **S. Nearly,** until up with the buoy on Eastern Mark Island Ledge; after which follow the directions for the Thoroughfare.

LIGHT-HOUSE.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Mark Island Light-house	**44 8 3**	**68 42 12**	**4 34 48.8**	**Fixed.**	**52**	**12**

TIDES.

Corrected Establishment	**11h 12m**
Mean Rise and Fall of tides	**9.0 ft.**
Mean Rise and Fall of Spring tides	**9.8 ft.**
Mean Rise and Fall of Neap tides	**8.2 ft.**
Mean duration of Rise	**6h 20m**
Mean duration of Fall	**6h 5m**
Rise of highest tide observed	**10.0 ft.**

VARIATION OF THE COMPASS.

The magnetic variation for 1879 is **15° 28′ W.**, with an approximate annual increase of **2′.**

SOUTHEAST HARBOR,

which has been before mentioned, is formed by the western branch of a large bay penetrating Deer Isle on its southern side. This island lies on the eastern side of Penobscot Bay, separating it from Eggemoggin Reach and Blue Hill and Jericho bays. It lies nearly **N.** and **S.**, is about nine miles long and very irregular in shape—being much indented by bays and coves,—but its average width is about five miles. It is thickly settled, but not very fertile. The large bay forming Southeast Harbor on the southern, and that which forms Northwest Harbor on the western side, penetrate deeply into the interior of the island, nearly dividing it into two parts—a very narrow isthmus, only a few hundred yards wide, being all that separates the heads of the two bays. **Deer Isle.**

Southeast Harbor is the main port of Deer Isle, although there is quite a settlement at Northwest Harbor. The large bay, before mentioned, of which it forms a part, enters from the southward between Stinson's and Whitmore's necks, branches to the westward along the northern shore of the latter, forming Southeast Harbor, and to the northeastward along the western shore of Stinson's Neck, joining Eggemoggin Reach abreast of Conary's Island. The only portion of this bay of any importance is its western branch, which forms Southeast Harbor.

Stinson's Neck, on the eastern side of the entrance to this harbor, has been before described (see page 174) as an island lying **N.** by **E.** and **S.** by **W.**, about two miles long, of moderate height, and in most places thickly wooded. Its shores are much cut up by coves, some of which, especially on its southern side, afford anchorage for small vessels. **Stinson's Neck.**

Whitmore's Neck. Whitmore's Neck, on the western side of the entrance, is also an island,—being separated from the main portion of Deer Isle by a passage about two hundred yards wide, which is, however, dry at low water. It is a mile and a half long, of irregular shape, the interior and highest parts thickly wooded, but near the shore showing cleared and cultivated land dotted with houses.

Nearly in the middle of the southern entrance to the harbor lie the Sheep Islands, before described, (see page 175.) The easternmost and larger of the two, which is nearly eight hundred yards long with an average width of three hundred and fifty yards, lies **NW.** by **W.** and **SE.** by **E.**, and is high, thickly wooded, and surrounded by ledges, most of which

Sheep Islands. are out at low water. Its western end is about two-thirds of a mile from the shore of Whitmore's Neck. The western island, which is very small and low, is called **Little Sheep Island**, and lies three hundred and fifty yards to the westward of the larger island and about eight hundred yards from the shore of Whitmore's Neck. There is, however, no safe passage between the two. Many ledges surround this island and are for the most part out at low water. To the southward they extend three hundred yards, and this southern shore should never be approached by strangers.

The entrance to Southeast Harbor lies between Sheep Island and Lazygut Islands and is nearly one mile wide. The eastern shore is tolerably bold; but the western side, especially near Oceanville, is ledgy and unsafe to approach. **Oceanville** is situated on the eastern shore of Whitmore's Neck, about two-thirds of a mile above the entrance. The harbor itself lies along the northern and western shores of the neck, and the **Inner Harbor** particularly, which is on the western side, is entirely land-locked and sheltered from all winds. The usual anchorage is, however, off Oceanville,—vessels of light draught alone being able to enter the Inner Harbor except at high water.

When the harbor is open it will appear as a straight and wide passage running between partly wooded and partly cleared shores of moderate height. The houses in Oceanville are seen on the western shore, near what appears to be the head of the harbor; while, on the eastern shore, Stinson's Neck will show as barren, rocky land, with one or two houses on it, and covered with a thick growth of spruce and birch. The western shore above Sheep Island is well settled;—the cleared lands, however, alternating with a stunted growth of trees, among which appear houses here and there, and a single church-

Crockett's Cove. spire rising above the trees. On the eastern or Stinson's Neck shore, and nearly opposite to Oceanville, lies Crockett's Cove, a large and wide indentation making to the eastward, and affording good anchorage in easterly gales. Its northern shores are barren, rocky, and destitute of vegetation except a few stunted spruce; while the southern shores are mostly cleared and of moderate height, with small groves of trees dotting the surface here and there. A wharf and group of houses stand on its southern point of entrance.

DANGERS

IN APPROACHING AND ENTERING SOUTHEAST HARBOR.

In approaching this harbor from the eastward, the first danger met with is called Lazygut Ledge, a small detached ledge, about five hundred yards **S.** from the eastern end of Lazygut

Lazygut Ledge. Islands, and having six feet at lowest tides. There is good water on all sides, but it is usual to pass to the southward of it; for which purpose a black spar-buoy (No. 7) is placed in three fathoms water on its southern side.

When past buoy No. 7 the course leads to the northwestward, and a red and black spar-buoy will be seen ahead and about three-quarters of a mile off. This is on The Boat or *Channel Rock*, which has three feet at lowest tides, and lies about seven-eighths of a mile **W.** $\frac{2}{3}$ **N.**

The Boat. from the western end of Lazygut Islands, and nearly half a mile **E.** by **N.** $\frac{1}{2}$ **N.** from the eastern end of Sheep Island. The buoy is placed in three fathoms about fifty feet to the eastward of the ledge, and is usually left to the westward, although there is good water between the rock and Sheep Island.

When past The Boat there will appear to the northwestward, and pretty well inshore, a black spar-buoy, (No. 1.) This is on Spermaceti or *Whale's Back Ledge*, making off from the western side of the passage (Whitmore's Neck) in a **SE.** direction for about eight hundred yards.

Spermaceti Ledge. There is no passage inside of the buoy,—the whole space between it and The Whale's Back being studded with sunken rocks. **The Whale's Back** is a large ledge, parts of which are always out, but which at low water forms a mass of bare rock about two hundred and fifty yards square. Its western end is only one hundred and fifty yards from the shore of Whitmore's Neck,—that space being studded with small ledges, bare at low water. Vessels will pass well to the eastward of the buoy on Spermaceti Ledge by the usual sailing-lines.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING SOUTHEAST HARBOR.

I. ***From the Eastward, having come through the main channel to the southward of Long Ledge,*** the course leads about six hundred yards to the southward of Lazygut Island. When, on the **W.** $\frac{1}{4}$ **S.** course from Lazygut buoy towards Eastern Mark Island buoy, the easternmost point of Lazy-

gut Island bears **NE. ½ E.**, steer **NW. ⅛ W.**, which course will lead safely up to the anchorage off Oceanville. *Or, coming through the Lazygut Channel,* when past Lazygut Ledge, on the **W.** by **S.** course for Eastern Mark Island Ledge, bring the western extremity of the easternmost Lazygut Island to bear **NE. ½ N.** and the highest part of Eastern Mark Island to bear **SW. ½ W.** and steer **NW. ⅛ W.**, which will, as before mentioned, lead safely up to the anchorage. The above courses pass nearly a quarter of a mile to the eastward of the buoy on The Boat or Channel Rock, and about six hundred and fifty yards to the eastward of Spermaceti Ledge. ***Sailing Directions--Southeast Harbor.***

II. ***To come from the Westward and enter Southeast Harbor.***—This can only be done through Deer Island Thoroughfare. Following the directions for that Thoroughfare (see pages 180–181) on the **E.** by **N.** course from Russ' Island, you will pass between The Haycock and Eastern Yellow Rock. On this course, when the highest part of Eastern Mark Island bears **SE. Southerly,** and you are nearly three hundred yards to the westward of the buoy on Eastern Mark Island Ledge, steer **N.** by **W. ¾ W.** between Sheep Island and The Boat. On this course continue until past the black buoy on Spermaceti Ledge, when the northwestern extremity of **Crockett's Point** will bear **NE. ¼ N.**, and you may steer **NW. ⅛ W.** to the anchorage. The above courses pass four hundred yards to the westward of The Boat, and seven hundred yards to the eastward of Spermaceti Ledge.

Or, wishing to pass to the eastward of Channel Rock, continue the **E.** by **N.** course through Deer Island Thoroughfare until abreast of the black and red buoy on Eastern Mark Island Ledge, when steer **N. ½ E.** towards Stinson's Neck until the eastern point of Sheep Island bears **SW.** by **W. ¾ W.** Now steer **NW. ⅛ W.**, as before. These courses pass an eighth of a mile to the eastward of Channel Rock, and about six hundred and fifty yards to the eastward of Spermaceti Ledge.

Wishing to go into the Inner Harbor, take a pilot at Oceanville.

To enter Webb's Cove from Deer Island Thoroughfare.—This cove, as before mentioned, (page 175,) affords good anchorage for weather-bound vessels. To enter it, when past Grog Island on the **W.** by **S.** course through the Thoroughfare, and about midway between it and Humpkin's Island, **Channel Rock,** in the mouth of the cove, will bear **N.** by **W. ¾ W.** Steer **NW.** by **N. ½ N.**, exactly for a low point on the western side of the cove, near its head. (This point may easily be recognized by a clump of trees on its eastern end,—the rest being cleared, and having two houses on its highest part.) Anchor at discretion. This course leads nearly three hundred yards to the westward of Grog Island Ledge, and a hundred and fifty yards to the westward of Channel Rock.

MERCHANT'S ROW.

Although this passage, as before mentioned, is not fit for strangers, yet a description of it and its dangers will not be out of place. It is rarely used except in winter, when the ice has rendered Deer Island Thoroughfare and Eggemoggin Reach unsafe or impassable. There is never any ice in this passage. Merchant's Row begins between Saddle-back Island on the north and Southern Mark Island on the south, but the channel is close under the Mark Island shore. Thence it passes to the westward through the labyrinth of islands and islets lying between Deer Isle and Isle au Haut, and enters Penobscot Bay about a mile and three-quarters to the southward of Mark Island, at the western end of Deer Island Thoroughfare. The entire length of the channel is seven miles.

Saddle-back Island.

It is, of course, impossible to enter this passage unless familiar with the appearance of the different islands through and among which it threads its way. Of these the two most important are McGlathery's Island on the northeastern, and Merchant's Island on the southwestern, side of the channel. The northern side of the entrance from the eastward is marked by Saddle-back Island, lying **NE.** and **SW.**, and about half a mile long. Its northeastern and southwestern ends are wooded and about forty feet high, but the middle of the island is quite low and bare of trees. When seen from the southward it shows two woody heads with a bare valley between them. About a quarter of a mile from its eastern shore lies a very small, rocky island, with one or two lone trees on it, called **Phœbe's Island**; and about the same distance to the southward another, with somewhat steep shores and wooded, called **Enchanted Island.** Half a mile to the southward of this lies a bare rock, surrounded by ledges at low water, and having no name.

Southern Mark Island.

Southern Mark Island lies about a mile and a quarter **S.** from Saddle-back Island, marking the southern side of the main entrance to the Row. It may, however, be left to the northward by vessels having come from outside of Marshall's Island, which, in that case, pass between it and the Fog Islands. It is small and rocky,—the rocks being worn smooth by the action of the sea,—and the only growth is stunted spruce. It lies about two miles to the westward of Marshall's Island, and from it the general course to the entrance to Merchant's Row is **W.** by **S.** if coming through the northern channel, and about **W.** by **N.** if coming through to the southward of Mark Island.

Fog Islands. The Fog Islands are a group of three; but the two easternmost, lying **N NE.** and **S SW.** from each other, are merely small bare rocks. The westernmost islet, lying about a third of a mile to the westward of these, is about seven hundred yards long, high, rocky, and covered with stunted spruce. This group lies a mile and a quarter to the eastward of **Rich's Point** (the northeastern point of Isle au Haut) and about a mile to the southward of Southern Mark Island. Many bare ledges and rocks surround them; and there is a deep channel between the large and small islands, which is, however, unfit for strangers.

McGlathery's Island. When to the westward of Southern Mark Island, the two large islands lying on the northern and southern sides of the passage are McGlathery's and Merchant's islands. McGlathery's Island is first met with, lying about two miles to the westward of Mark Island and about three-quarters of a mile to the southward of Spruce Island, on the southern side of Deer Island Thoroughfare. Seen from the eastward, its southern end appears high and well wooded with scrubby trees, while the northeastern end is from ten to twenty feet high, with a single tree here and there; and there are one or two houses near the northern end. This island lies **NE.** and **SW.**, is about two-thirds of a mile long and of irregular shape. Its southeastern part rises to a height of one hundred feet and is for the most part wooded with scrub. About a quarter of a mile to the southeastward of it lies **Gooseberry Island**, small, low and rocky, with a growth of scrubby trees in the middle. It extends an eighth of a mile **E.** and **W.**

Round Island. Round Island, lying an eighth of a mile to the westward of McGlathery's, is nearly round, rises regularly to a height of about eighty feet in the centre, has a diameter of about four hundred yards, is rocky, and covered with a scattered growth of stunted spruce and fir. There is a passage for light-draught vessels between it and McGlathery's Island.

Bill's Island. In range with Merchant's Island will be seen a rocky islet, about forty feet high, composed of smooth, bare rock, covered on top with a little grass and a very few scrubby trees. This is Bill's Island, and lies about three-quarters of a mile **S SW.** from Round Island and nearly eight hundred yards to the eastward of the eastern end of Merchant's Island.

Pell's Island. The main channel leads to the northward of Bill's Island; but those who are well acquainted with the locality often pass to the southward, between it and Pell's Island, lying about six hundred yards to the southward of it, about eight hundred yards to the eastward of the southeastern end of Merchant's Island, and about two miles and a quarter to the southward and westward of Southern Mark Island. It lies nearly **N.** and **S.**, and is about a quarter of a mile in diameter. Its surface is undulating, (varying in height from twenty to sixty feet,) and bare of trees except at its northeastern end, which is well wooded. The rocks lining the shore are, like the rest of the islands in this vicinity, worn perfectly smooth by the action of the sea.

Burnt Island. The large island lying about four hundred yards to the southward of Pell's Island, and close in with the northern shore of Isle au Haut, is Burnt Island, very irregular in shape, about eight hundred yards long in a **N.** and **S.** direction, and two-thirds of a mile in an **E.** and **W.** direction. On its eastern side it sends off a long, narrow spur, quite low, wooded with the usual growth of spruce and fir, and terminating in a round wooded head. On the southwestern side the shore rises precipitously to a height of one hundred and twenty feet and is thickly wooded. There are one or two houses on the northern side near the shore, where the land is much lower. Many bad ledges and dangerous bare rocks lie off this northern shore and between it and Pell's Island, and no one should attempt that passage. Between Burnt Island and Isle au Haut there is a passage from an eighth to a quarter of a mile in width, called **Burnt Island Harbor.** Nine feet at low water may be carried through it, but it is not safe for strangers.

Merchant's Island. Merchant's Island, lying on the southern side of the Row, is the largest island in the group, and is very readily distinguished,—its southeastern end rising somewhat steeply to a height of one hundred and twenty feet, and bare of trees except on its extreme point, where there is a single lone spruce. From the summit of this high head the land descends to the northward regularly but rapidly nearly to sea-level, and the slopes and low lands are thickly wooded. The rest of the island is undulating, presenting alternately low lands and hills from twenty to forty feet high, partly wooded and partly cleared, with a group of houses on the northern shore near the western end. This island is of very irregular shape, lies about **NW.** and **SE.**, and is a little over a mile long. Anchorage may be found on its northern side, near the group of houses mentioned above, between it and a small, rocky island about three hundred yards to the northward, called **Harbor Island.** It is bare except where a few spruce stand near its eastern end. The anchorage is called **Merchant's Harbor**, and is unobstructed.

Wreck Island. On the northern side of the passage, opposite to Merchant's Island and next to the westward of Round Island, lies Wreck Island, sometimes called **Barter's Island.** It is high, rocky, and almost entirely bare except for a stunted growth of spruce near the middle and one or two lone trees near its southern end; and is about four hundred yards to the northwestward of Round Island and two-thirds of a mile to the northeastward of Harbor Island. It lies about **E.** by **N.** and **W.** by **S.**, is half a mile long, about sixty feet high, and has a group of houses on top near the middle. Nearly midway between it and Harbor Island a red spar-buoy will be passed, placed to the southward of a group of half-tide ledges, called **Barter's Island Ledges.** There is no safe passage between this buoy and Wreck Island.

Next to the westward, and a little over half a mile from Wreck Island, lies George's Island, or **George's Head**, as it is sometimes called, extending **E.** by **S.** and **W.** by **N.** It is a little over a quarter of a mile long and of moderate height at its eastern end; but its western end runs into a steep, almost perpendicular, rocky bluff, about eighty feet high, bare of trees, while a thick growth of fir and spruce cling to the slopes on the eastern end. Where the rocks are bare they have a peculiar white appearance, common to several of this group. Long shoals extend to the eastward and southeastward from this island, and several rocky islets and bare ledges lie to the southward of it and between it and Wreck Island. **George's Island.**

Between George's and Wreck islands, but much farther to the northward, will be seen St. Helena Island, remarkable for the very white rocks of which it appears to be composed when seen from this side. It is high and almost entirely bare except for a growth of stunted firs clinging to its sides and summit near the middle. It lies nearly half a mile to the southward of Green Island and one mile to the southeastward of Thurlow's Island, (on the southern side of Deer Island Thoroughfare.) Between it and George's Island there is a narrow passage through which fifteen feet may be carried,—the channel leading close under the St. Helena shore. **St. Helena Island.**

Off the western end of Merchant's Island there will be seen, on passing to the westward, three small islands in a line nearly **NE.** and **SW.** from each other. Of these, the northernmost and smallest, which is to be left to the southward, is Ewe Island, a rocky islet, with steep, white-looking shores, and crowned with small fir and spruce, lying about six hundred yards to the northwestward of Merchant's Island and nearly four hundred yards **N NE.** from Hardwood Island,—the largest of the group. **Ewe Island.**

Hardwood Island is a nearly round island, about three hundred and fifty yards in diameter, and lies nearly a quarter of a mile to the westward of Merchant's Island. It is about forty feet high, rocky, and covered with a pretty thick growth of trees. Like all of the islands on this side, the rocks are worn quite smooth by the action of the sea. There is a good, safe passage, with over three fathoms water, between Hardwood and Merchant's islands, leading into Isle au Haut Bay. **Hardwood Island.**

Ram Island, the southernmost of the group, lies a quarter of a mile to the southwestward of Hardwood Island, and is small and rocky, with a thick growth of fir and spruce near its summit. The channel passes well to the northward of it.

On the northern side of the passage the large, high, well-wooded and partly-settled island seen next to the westward of George's Head, but much farther to the northward, is Thurlow's or Crotch Island, lying on the southern side of Deer Island Thoroughfare. Two small islands lie off its southern side, called, respectively, **Sand** and **John's** islands. They are not, however, in Merchant's Row. **Thurlow's or Crotch Island.**

After passing to the westward of Ewe Island, the next met with on the northern side of the passage is Farrel's Island, high, bare and rocky, and composed of smooth rocks covered with a small growth of grass. It lies about **E.** and **W.**, is about four hundred yards long, and a little over a mile to the westward of George's Head. The bare, rocky ledges extending from its southwestern end are known as **Farrel's Island Ledges.** The channel passes between this island and **West Halibut Rock**,—a bare, rocky islet, surrounded by ledges and with somewhat steep faces. About five hundred yards to the westward of this rock lies **Shag Ledge**, another bare, rocky islet, somewhat steep-to. Each is about fifteen feet out at high water. **Farrel's Island.**

Mark Island, on the southern side of the western entrance to Deer Island Thoroughfare, will be seen about a mile and a half to the northward on approaching Farrel's Island, and will be easily recognized by the light-house and keeper's dwelling on its western end. When seen from the southward it shows white rocks covered with a scanty growth of fir and spruce. **Mark Island.**

When to the westward of Halibut Rock and in Isle au Haut Bay, it is usual to shape the course for Fox Islands Thoroughfare, Eagle Island or Owl's Head. If bound to the Thoroughfare, Scraggy Island will soon be seen, lying to the southward and westward of Mark Island, at the western entrance to Deer Island Thoroughfare. It is low, rocky and wooded, and a group of trees near the middle has much the appearance of a large sheaf of fodder. Bad ledges lie to the southward and southwestward of this island,—some of which are out at one-quarter ebb and some at high water. About one mile to the southwestward of it lies **Black Ledge**, which is always out. This is a very dangerous ledge, and must not be closely approached. Scraggy Island should receive a large berth to the northward and eastward by vessels using this passage, as none of the ledges are buoyed and they are all dangerous. **Scraggy Island.**

DANGERS

IN PASSING THROUGH MERCHANT'S ROW FROM BLUE HILL BAY.

Although, as before mentioned, no stranger should attempt to use this passage unless compelled by necessity to do so, a general description of its dangers will not be out of place. Coming through the main channel, on approaching Southern Mark Island a red and black spar-buoy will be seen about three-quarters of a mile to the southward of Saddleback Island. This is on East Halibut Rock, lying nearly in the middle of the entrance, but on the northern side of the channel, and about a mile to the northeastward of Southern ***East Halibut Rock.***

Mark Island. It has four feet at low water and good water all around it, but it is usual and best to leave it to the northward, unless bound to the southward through Jericho Bay, when it is usually left to the southward. When past this buoy and up with Southern Mark Island, on the course through the Row, a red spindle surmounted by a wheel will be seen about half a mile E. by N. ½ N. from Gooseberry Island. This is on Colby's Ledge, dry at half-tide, and is to be left to the northward and westward. When past it look out for *Middle Ledge*, bare at low tides, which lies about exactly midway of the passage;—the southwestern end of McGlathery's Island bearing NW. by N., distant one mile and an eighth, and the southeastern point of Merchant's Island W. ¼ S., distant a mile and five-eighths. There is no buoy, but one will be recommended.

Colby's Ledge.

When past Middle Ledge and steering up between Merchant's and McGlathery's islands, a red spar-buoy will be seen about half a mile to the westward of McGlathery's Island. This is on Barter's Island Ledges, bare at half-tide, which lie six hundred and fifty yards S. from Wreck Island and about half a mile to the northeastward of Harbor Island. The buoy is marked No. 4 and is placed about thirty yards to the southeastward of the ledges. It is not well to pass to the northward of it, although that passage is sometimes used by those who are well acquainted.

Barter's Island Ledges.

When past the buoy on Barter's Island Ledges look out for a dangerous sunken ledge, with three feet at mean low water, on the southern side of the channel, and about a quarter of a mile to the northwestward of Harbor Island. This is Harbor Island Ledge, and is marked by a spar-buoy placed about one hundred and fifty yards W. by N. ¾ N. from its shoalest part. This buoy is not in the Buoy List and is incorrectly placed, as it should be about one hundred yards to the northward of the ledge. The sailing-lines pass about one hundred yards to the northward of the danger.

Harbor Island Ledge.

When past Harbor Island Ledge there are no dangers in the channel until up with Farrel's Island, which should receive a berth to the northward of not less than three hundred and fifty yards to avoid *Farrel's Island Ledges*, a group of half-tide rocks lying off its southern and southwestern ends. They are tolerably bold-to, and, the southernmost being always out, they are not buoyed.

Scraggy Island Ledges.

Scraggy Island Ledges lie to the southward and southwestward of Scraggy Island, and consist of a long line of rocks, some bare at one-quarter ebb and others always out, which extends about five hundred yards from the island. **Black Ledge**, the southernmost, which is always out, is very dangerous, and must be carefully avoided. An iron spindle, painted red and surmounted by a wheel, is placed on this ledge, and must receive a berth to the northward of not less than a quarter of a mile. It is not advisable to come nearer to the island than half a mile.

SAILING DIRECTIONS

FOR PASSING THROUGH MERCHANT'S ROW FROM BLUE HILL BAY.

I. ***Having come through the passage between Mahoney's and Smutty-nose islands.***—Continue the S. by W. ¼ W. course from abreast of the striped buoy on Hay Island Ledge through Jericho Bay until the dry part of Green Island Ledge bears NW. and the southeastern end of Lazygut W. by N. ⅜ N., when you will have six fathoms, and SW. ½ W. will lead, with not less than six fathoms, into Merchant's Row. On this course, when the southwestern extremity of McGlathery's Island bears W NW., distant a little over a mile and a quarter, and the eastern point of Burnt Island SW. ⅛ W., distant about a mile and a half, steer W. by N. ½ N. through the middle of the passage, carrying not less than seven fathoms. On this course, when Mark Island Light-house opens to the westward of Farrel's Island on a bearing of NW. by N. ¼ N. and Eagle Island Light-house bears N. by W. ⅜ W., steer NW. by W. ¾ W. until Mark Island Light-house opens to the westward of Scraggy Island on a bearing of NE. ⅜ N. and Eagle Island Light-house N. ⅝ W., when W. by N. ¾ N. will lead up to the entrance, after which follow the directions for the Thoroughfare.

The above courses pass three-eighths of a mile to the southeastward of the eastern end of Green Island Ledge; three-quarters of a mile to the northwestward of Sunken Egg Rock; half a mile to the southeastward of Long Ledge; a quarter of a mile to the southeastward of *the dry ledge* lying five-eighths of a mile SW. by S. ¼ S. from Long Ledge; half a mile to the northward of Middle Ledge; about a hundred and fifty yards to the southward of the striped buoy on East Halibut Rock; three-eighths of a mile to the southward of the spindle on Colby's Ledge; one hundred and fifty yards to the southward of Barter's Island Ledges; nearly two hundred yards to the northward of Harbor Island Ledge; about a quarter of a mile to the southward of Farrel's Island Ledges; and about a quarter of a mile to the southward of Scraggy Island Ledges.

II. ***Having come through the passage between Mahoney's and Calf islands.***— Steer **SW. ½ W.**, passing about midway between Mahoney's and Calf islands; and this course continued will lead into Merchant's Row. As soon as the southwestern end of McGlathery's Island bears **W NW.**, distant about a mile and a quarter, and the eastern point of Burnt Island **SW. ⅛ W.**, distant a mile and a half, steer **W.** by **N. ½ N.**, and follow the directions given above. *Sailing Directions--Merchant's Row.*

Those coasters who use Merchant's Row are such as are accustomed to thread the intricate channels of the Casco Passage and York Narrows, and, therefore, generally of draught not exceeding thirteen feet, and perfectly familiar with all the dangers.

CASCO PASSAGE.

What is called Casco Passage leads between Black and Calf islands on the north and Orono Island (which lies off the northwestern end of Burnt-Coat Island) on the south, and is used by vessels of light draught which have come through the Cranberry Island Passage from Mount Desert. It should not be used by strangers,—the larger portion of the dangers in it being unmarked. This passage leads from Blue Hill Bay across what is called Jericho Bay, and thence by Deer Island Thoroughfare or Merchant's Row into Penobscot Bay, and is often, though erroneously, called **York Narrows.**

Black Island. Black Island, on the northern side of the passage, will appear low, rocky and thickly wooded, and lying **NW.** and **SE.**, off the northern shore of Burnt-Coat, from which it is distant about three-quarters of a mile.

Orono Island. On the southern side, what appears to be the northwestern end of Burnt-Coat is, in reality, Orono Island, showing as low, rocky land, thickly wooded, extending into a long, low, rocky point which has one or two lone trees upon it. It may be well to state that coming from the westward this island presents a more remarkable appearance, and serves as a means of recognizing the entrance to Casco Passage. It shows as a wooded island, highest at its southern end, where is a bare, white, bluff, rocky head, with a few trees clinging to its southern face. **Its Little Thrumb-cap,** a low, rocky point on its northern end, with a few trees in the middle, looks like a separate islet. (See page 152.)

A quarter of a mile to the eastward of Orono is **Phinney's Island,** already described on page 151 as low, flat, rocky, and bare of trees except for one or two at its northern and southern ends. There are really two islands, lying **N NE.** and **S SW.** from each other, and joined at low water. Nearly a quarter of a mile to the eastward of these islands are **The Triangles,**—three small bare rocks, joined at low water by dry ledges;—and six hundred yards to the eastward of these, **Crow Island,** low and rocky, with a group of spruce exactly in the middle.

In entering the passage, **Cranberry Marsh Point** or **North Point** is first passed. This is the northeastern point of Burnt Coat, and appears as a long, low, wooded point, with sandy beach, and a rocky, wooded head, looking like an island, rising from the beach about half a mile to the southward. The houses which appear over this beach are in Mackerel Cove, which opens as soon as you are past the western part of the point, when it will show as a large, deep cove, extending into the northern shore of the island about a mile. Its shores are well wooded, and of moderate height except at the head of the cove and near its eastern side, where are cleared fields and a few houses. This cove is a good anchorage for coasters. (See page 151.) **Mackerel Cove.**

Calf Island. Passing to the westward of Black Island, two other islands will appear to the westward of it, which are not, however, in this passage. The southernmost, called Calf Island, is somewhat higher than Black Island; and part of its southern face is cleared and has a house and barn on it. The higher part is mostly covered by low, thick woods. (See page 152.)

The northern island, about a mile and three-quarters off, is **Pond Island,** which appears cleared and gently sloping, with a wooded summit. The middle of the island is low land, while the northeastern end rises to a round head covered with a very thick growth of trees. (See page 152.)

John's Island. Just to the westward of Calf Island is a small, low islet, covered with a thick growth of spruce and fir. This is John's Island. All of these islands lie on the eastern side of the southern approach to Eggemoggin Reach, and vessels which have come through Casco Passage and are bound through the reach must pass to the westward of them.

The high, wooded lands seen in the distance, and apparently stretching across the passage at its western end, are the shores of Stinson's Neck and Deer Isle. (See page 181.) Bound through Deer Island Thoroughfare, the course leads directly towards them; but if bound through Merchant's Row, it turns more to the southward, towards Saddle-back Island, leaving Marshall's Island to the southward.

Buckle's Island. When to the westward of Orono a bare, rocky islet, called **Long Ledge,** will be seen nearly in the middle of the passage. Shoal water and ledges bare at low water lie on all sides of it. Next to the westward, and close in with the northwestern point of Burnt-Coat, lies Buckle's Island, also on the southern side of the passage. It is low, thickly wooded, and between it and Burnt-Coat is a good anchorage for coasters, called **Buckle's Island Harbor.** There are no dangers in the entrance, and vessels may stand fearlessly in, (using the lead,) and anchor according to draught. (See page 152.)

Marshall's Island. Marshall's Island is that large, high, woody island seen about two miles to the southwestward, and is also to be left to the southward. It is about two and a half miles long, lies nearly N. and S., exactly in the middle of the western entrance to Blue Hill Bay, and there is a good channel on each side of it. From its northern end Saddle-back Island is distant about three miles, and Southern Mark Island nearly the same distance in a SW. by W. direction. (See also page 164.)

DANGERS

IN APPROACHING AND ENTERING CASCO PASSAGE FROM THE EASTWARD.

On the southern side of the passage, give Cranberry Marsh Point a berth of four hundred yards to avoid *Cranberry Marsh Ledge*, lying about two hundred and fifty yards from the point. It has two feet at low water and is not buoyed.

The Triangles. Approaching Crow Island, look out for The Triangles, which lie W. by N. ½ N. from that island, are bare at half-tide, and are not buoyed. Near them is a bare ledge, called **Cherry Ledge**, and both are to be left to the southward. When past them, and nearly abreast of the southeastern point of Black Island, there will be seen ahead, and about

Long Ledge. a quarter of a mile off, a black spar-buoy, (No. 5.) This is on the eastern end of Long Ledge, to the southward of which the course passes. This ledge, as before mentioned, is a bare, rocky islet about half a mile to the westward of Orono, and is surrounded by ledges. The buoy is on that portion which extends to the eastward and is bare at low water.

Do not approach the southwestern end of Black Island nearer than three hundred yards, to avoid *a ledge out an hour before low water*, and lying about two hundred yards from that point. Also, when near the northwestern end of Orono do not approach it too closely, as there are several ledges off the point, obstructing the southern side of the channel.

Southeastern end of Long Ledge. A quarter of a mile to the southwestward of buoy No. 5, and about the same distance to the northwestward of Orono, is another black spar-buoy on a six feet shoal near the southeastern end of Long Ledge, and off the entrance to Buckle's Island Harbor. The courses pass to the southward of it. This ledge is erroneously called *Buck Island Ledge* in the official Buoy List. The buoy, which is marked No. 3, is placed in three and a quarter fathoms about twenty yards to the southeastward of the ledge; and

Hawley's Ledge. when abreast of it you must keep the Buckle's Island shore aboard in order to avoid Hawley's Ledge, which has nine feet at mean low water and lies almost exactly in the middle of the passage. This ledge was developed by Lieutenant J. M. Hawley, U. S. N., Assistant, Coast Survey, during the summer of 1877, and a buoy will be recommended to be placed upon it.

When past Hawley's Ledge there will be seen to the northwestward, distant about three-eighths of a mile, another black spar-buoy. This is on the western end of Long Ledge, is

Western end of Long Ledge. marked No. 1, and placed in four fathoms water. This buoy bears from the northeastern end of Buckle's Island NW. by N. ¼ N., distant nearly half a mile; from the black buoy (No. 3) on the southeastern end of Long Ledge W. by N. ¼ N., distant a little over half a mile; and from it Egg Rock bears W. ⅝ N., distant one mile and an eighth.

When past the westernmost buoy on Long Ledge there are no dangers until you come up with *Sunken Egg Rock*, already described on page 178. It has eight feet at mean low water, lies nearly half a mile SW. by S. from Egg Rock, with a six-fathom channel between them, and is marked by a red and black spar-buoy placed in twenty feet water about one hundred yards to the northeastward of the shoal of the rock. To avoid this ledge do not stand farther to the eastward than to bring Mahoney's Island to bear N NE.

When past Sunken Egg Rock, if you are bound through Deer Island Thoroughfare, consult the description of dangers in the approaches to that Thoroughfare, on pages 177–180; but if bound through Merchant's Row, and desiring to pass to the southward of Egg Rock, beware,

Hanus' Ledge. when standing towards Burnt-Coat Island, of Hanus' Ledge, a detached ledge, with twelve feet at mean low water, lying about three-eighths of a mile from the Burnt-Coat shore. It is not buoyed, but is easily avoided by not standing to the southward of the northern point of Buckle's Island bearing E. by N. ¾ N. Although there is good water (ten fathoms) between this ledge and Burnt Coat-Island, it is best, so long as it is not buoyed, to pass to the northward of it.

When past Hanus' Ledge the dangers are the same as those already described under the head of dangers in Merchant's Row.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING CASCO PASSAGE FROM THE EASTWARD.

Strangers must not attempt this passage without a pilot.—The channel is narrow and full of ledges, and the current sets strongly through York Narrows,—rendering the navigation dangerous to those who are not familiar with the set and strength of the tide. The courses usually sailed by coasters will, however, as usual in this work, be given.

Give Cranberry Marsh Point (the northeastern point of Burnt-Coat Island) a berth of four hundred yards to the southward; and when it bears S. steer W. by N. ⅜ N., past Crow Island, The Triangles and Phinney's Island, until you come abreast of the middle of Orono and the northeastern end of Buckle's Island bears SW. by W. Now steer that course for the island, passing to the southward of the buoys on Long Ledge and carrying not less than twenty-one feet. *Sailing Directions--Casco Passage.*

If bound through Deer Island Thoroughfare.—When within about four hundred yards of Buckle's Island and Buckle's Island Harbor is fairly open, steer W. by N., passing two hundred yards to the southward of Egg Rock and a quarter of a mile to the northward of Sunken Egg Rock; and continue this course until the dry part of Green Island Ledge bears NW. and the southeastern end of Lazygut W. by N. ⅜ N., when you will have six fathoms, and must steer W. ¼ S. and follow the directions for the Thoroughfare. But, *wishing to pass to the southward of Sunken Egg Rock*, when, on the W. by N. course from off Buckle's Island Harbor, Egg Rock bears W. by N. ¼ N. and the western end of Buckle's Island S. ¾ W., and you have six fathoms, steer W. ½ S. Southerly, which will pass about four hundred and fifty yards to the southward of the striped buoy on Sunken Egg Rock. Continue this course until Egg Rock bears NE. by N. ½ N., (with the buoy nearly in range with it,) and Lazygut Island NW. by W. ⅜ W.; when steer W NW., which will lead up with the black buoy on Long Ledge. Now steer W. by N. ½ N. and follow the directions for the Thoroughfare.

But if bound through Merchant's Row.—On the W. by N. course from off Buckle's Island Harbor, when Egg Rock bears W. by N. ¼ N. and the western end of Buckle's Island S. ¾ W., as before, steer W SW., which course will lead up to the entrance to the Row. On this course, when the southwestern extremity of McGlathery's Island bears W NW., distant a little over a mile and a quarter, and the eastern end of Burnt Island SW. ⅛ W., distant about a mile and a half, steer W. by N. ½ N. and follow the directions for this passage.

The above courses for Merchant's Row pass about five-eighths of a mile to the southward of the buoy on Sunken Egg Rock; four hundred yards to the northward of Hanus' Ledge; and three-eighths of a mile to the southward of the spindle on Colby's Ledge.

On the above courses, to enter Buckle's Island from the Eastward.—This harbor is barred by the ledges and shoals extending to the southward from Buckle's Island and surrounding **Duck Island** and **Hen Island**, two low, rocky islets with a very few trees on them, lying between Buckles and Burnt-Coat islands. *To enter it from the eastward.* On the SW. by W. course through Casco Passage, when within about four hundred yards of Buckle's Island and the middle of the entrance to the harbor bears SW. by S. ¼ S., steer that course, (which will lead safely in,) and anchor according to draught, in from six to twelve feet at low water.

To enter the western part of Buckle's Island Harbor.—This part of the cove is sometimes, though erroneously, called **Seal Cove**. There is no passage, except at high water, across the bar between the eastern and western harbors. *Coming from the eastward*, bring the southwestern end of Buckle's Island to bear SE., distant three-eighths of a mile, and Egg Rock NW. by W. ⅜ W., distant one mile, and steer S. by E. ½ E., which will lead into the harbor, where anchor in from six to eighteen feet according to draught.

Coming from the Westward, to enter Buckle's Island Harbor.—Give **Swan Island Head** (the western point of entrance to the harbor) a berth to the southward of a quarter of a mile, and steer SE. by E. ¼ E. into the harbor, anchoring according to draught.

The only tidal notice at present available is that already referred to in the description of Burnt-Coat Island and vicinity, viz: that near Cranberry Marsh Point a strong current sets constantly to the eastward at all stages of tide except the first of the flood.

YORK NARROWS

is the name given to that narrow and somewhat crooked passage leading between Orono Island on the north and the northwestern end of Burnt-Coat on the south, into the Casco Passage. It is never used except by fishermen and light coasters who are thoroughly familiar with its dangers; and no sailing directions would be of use. It may be entered by passing either to the northward or southward of **Round Island**, (see page 151,) but it is usual to pass to the southward, where the channel is nearly unobstructed.

York Narrows. *Round Island Ledge*, with five feet, makes off to the westward from Round Island for about four hundred yards; *a ledge with thirteen feet* lies nearly in the middle of the northern passage; and *Hawley's Ledge*, with nine feet, obstructs the passage at its eastern end. Besides these dangers, the current runs with great velocity; and strangers, therefore, must under no circumstances attempt to pass through. The usual course through the southern passage is **NW. ½ W.**, exactly for the southwestern end of Orono Island, carrying not less than four fathoms. When within three hundred and fifty yards of the island, **NW. by W. ½ W.** is steered into Casco Passage, passing an eighth of a mile to the southward of the black spar-buoy (No. 3) on the southeastern end of Long Ledge. When the eastern end of Buckle's Island bears **SW. by W.**, distant six hundred yards, you are fairly in Casco Passage, and must steer **SW. by W.** for two hundred yards, and then follow the directions for the passage. No more intelligible directions than the above can be given at present.

PENOBSCOT BAY,

the most extensive of the great bays which penetrate the coast of Maine, may be said to begin at Isle au Haut on the east and White Head (at the entrance to Muscle Ridge Channel) on the west. Between these two points the distance is twenty miles, which is here the width of the bay; but a great mass of islands, large and small, lying about midway between the eastern and western shores, separates the bay into two parts, known as East and West Penobscot bays. From the entrance to the mouth of the Penobscot River the bay is about twenty-eight miles long,—its general course being about **NE. by N.** to **N NE.** It is not only the largest but the most important bay on the coast of Maine. Upon its shores are situated the towns of Belfast, Castine, Camden, Rockport and Rockland; while at the head of navigation, on Penobscot River, is the city of Bangor, the centre of the most extensive lumber trade on this part of the coast. Many smaller towns and villages, most of which have some coastwise trade, line the shores of the river and bay.

Bangor, one of the largest towns in the State, (having a population of about sixteen thousand,) is situated on the western bank of Penobscot River, forty-five miles above the mouth of the bay, and at the head of tide-water and navigation. **Belfast** is situated at the mouth of Belfast or Passagassawakeag River, (which empties into Belfast Bay,) and is about twenty miles above Owl's Head and twenty-six miles above the mouth of the bay. **Castine** is on the eastern side of the bay, on what is called Bagaduce River, which makes in to the northward of Cape Rosier, between it and Dice's Head. It is twenty-one miles above Saddle-back Ledge Light-house at the mouth of the bay. **Camden** lies on the western side of the bay, seven miles above Owl's Head and thirteen from the entrance. **Rockport** is about two miles below Camden. The city of **Rockland** is also on the western side, at the head of a large cove which makes in on the northern side of Owl's Head. It is the largest town on the western shore, and is famous for its lime-works. The entrance to the harbor is about six miles above the mouth of the bay.

Both sides of the entrance to Penobscot Bay are marked by lights. The easternmost is on Saddle-back Ledge, which is

Saddle-back Ledge and Light-house.

off the southwestern end of Isle au Haut, and is a high, black rock, formed somewhat like a saddle, lying a little over three miles **NW. by W. ½ W.** from the southwestern end of Isle au Haut, sometimes called Western Ear. Saddle-back Ledge Light-house is of granite, the lower half painted white and the upper half remaining of the natural color of the stone, and has a one-story wooden porch attached, painted brown. The tower is thirty-six feet high, and shows a fixed white light, of the fifth order of Fresnel, from a height of fifty-one feet above the sea, visible twelve miles. Its geographical position is

Latitude ..... 44° 0′ 51″ N.
Longitude ..... 68° 43′ 35″ W.

White Head Island and Light-house.

The light which marks the western side of the entrance is on White Head Island, a rocky island lying close in with the main shore, about seventeen miles **W. ½ N.** from Saddle-back Ledge Light-house. It is about eight hundred yards long in an **E.** and **W.** direction, and wooded principally with stunted spruce and fir, with which, like all the islands in its vicinity, its surface is covered. White Head Light-house is built on the western end of the island, half way up the slope of **White Head**, and is a granite tower, unpainted, thirty-four feet high, and shows a fixed white light, of the third order of Fresnel, from a height of seventy-nine feet above the sea, visible fourteen miles. The tower is connected with a one-story dwelling-house, whitewashed. Its geographical position is

Latitude ..... 43° 58′ 42″ N.
Longitude ..... 69° 7′ 28″ W.

Fog-signal. A ten-inch steam fog-whistle has been established at this light-house, which, during a fog, gives blasts of eight seconds at intervals of fifty-two seconds.

The following are the bearings and distances from prominent points of the two lights which mark the eastern and western limits of Penobscot Bay:

Saddle-back Ledge Light-house bears from

	Miles.
Mount Desert Rock Light-house, W NW.	26
Matinicus Rock Light-houses, NE. ¾ N.	15
White Head Light-house, E. ¾ S.	17
Monhegan Light-house, E. by N. ¼ N.	30
Seguin Light-house, E. ¼ N.	48
Cape Ann Light-houses, (Thatcher's Island,) NE. by E. ¼ E.	116
Highland Light-house, (Cape Cod,) NE. ¼ N.	133



Outlying Islands of Penobscot Bay from the Eastward, Saddleback Lt.Ho.bearing N.by W.¼ W.distant 6 Miles,Matinicus Rock Lt.Houses S.W.by W.¼ W.13 Miles.



Matinicus and Ragged Ids.from the Westward, Matinicus Rock Lt.Houses bearing E.by S.½ S.distant 7¾ Miles,Outer Green Id.N.E.by N.¾ N.6¾ Miles.



Entrance to East Penobscot Bay, Eagle Id.Lt.Ho.bearing N.Easterly distant 15 Miles,Saddleback Lt.Ho.N.W.by N.¼ N.3 Miles.



Entrance to Penobscot Bay from the Westward, Matinicus Rock Lt.Houses bearing E.by S.½ S.distant 8 Miles,Outer Green Id.N.E.by N.¼ N.6¼ Miles.

White Head Light house bears from

	Miles.
Saddle-back Ledge Light-house, W. ¼ N.	17
Mount Desert Rock Light-house, W. by N. ½ N.	43
Matinicus Rock Light-houses, NW. by N. ¾ N.	17
Monhegan Light-house, NE. ¼ E.	15¼
Cape Ann Light-houses, NE. by E. Northerly	105
Highland Light-house, (Cape Cod,) NE. ¼ N.	125

Matinicus Rock and Light-houses.

The guide to the approaches to Penobscot Bay from seaward is on Matinicus Rock, a bare, rocky islet, about eight hundred yards long NE. and SW. and fifty feet high, lying nearly thirteen miles to the southward of the entrance and about four miles S. ¼ E. from Matinicus Island. Near its southwestern end, and on the highest part, are the light-houses called Matinicus Rock Light-houses, two granite towers one hundred and eighty feet apart, in a line N NW. and S SE. from each other. Three dwelling-houses, one of granite and two of wood painted white, stand close to the towers. The light-houses are forty and fifty feet high, respectively, and show fixed white lights, of the third order of Fresnel, from heights of eighty-five and ninety feet above the sea, visible fourteen miles. The geographical position of these lights is

Latitude	43° 47′ 0″ N.
Longitude	68° 51′ 18″ W.

Fog-signals.

A twelve-inch steam fog-whistle (in duplicate) is placed a short distance to the southward of the southern tower, and gives blasts of five seconds at intervals of twenty-five seconds; and there is also a bell-tower, with a fog-bell struck by machinery, which is sounded during thick weather in case of accident to the steam-whistle.

The following are the bearings and distances of Matinicus Rock Light-houses from prominent points on the coast:

From

	Miles.
Machias Seal Island Light-houses, W. by S. ¼ S.	87
Bryer's Island Light-house, W.	110
Seal Island Light-house, (Cape Sable,) NW. by W. ½ W.	106
Mount Desert Rock Light-house, W. ¼ S.	34
Head Harbor Light-house, W. by S. ½ S.	71
Petit Manan Light-house, W SW.	56
Saddle-back Ledge Light-house, SW. ½ S.	15
White Head Light-house, SE. by S. ⅝ S.	17
Monhegan Light-house, E. by S. ¼ S.	20
Seguin Light-house, E. by S. Nearly	39
Cape Elizabeth Light-houses, E. ¼ S.	60
Boon Island Light-house, E. by N. Northerly	81
Cape Ann Light-houses, NE. by E. ½ E.	102
Boston Light-house, NE. by E. ¼ E.	125
Minot's Ledge Light-house, NE. by E. ¼ E.	125
Race Point Light-house, (Cape Cod,) NE. ¼ E.	120
Highland Light-house, (Cape Cod,) NE. Northerly	118

From these light-houses the centre of Jeffrey's Bank bears S. ¼ E., twenty-six miles distant; and Ammen's Rock (on Cashe's Ledge) S. by W. ¼ W., fifty-one miles distant.

Ragged Island.

Ragged Island lies about two miles and a half N. by W. from Matinicus Rock Light-houses and about three-quarters of a mile S. from Matinicus Island. It is of irregular shape, lies nearly NE. and SW., and is a mile and a quarter long, with hills, from sixty to one hundred feet high, separated by low lands. The hills are mostly wooded and the low lands cleared. Its outline is very irregular,—being much cut up by coves, some of which afford good shelter for vessels of light draught; but its shores are foul, especially on its southern and eastern sides, where there are many dangerous bare and sunken ledges.

Matinicus Island.

Matinicus Island lies N NE. and S SW., about three-quarters of a mile to the northward of Ragged Island, and a little over four miles from Matinicus Rock Light-houses. It is somewhat more than a mile and three-quarters long, about three-quarters of a mile wide, in no place over sixty feet high, very gently sloping, and for the most part cleared, although near the shore cleared and wooded lands occur alternately. Its northern end, called **Northeast Point**, is wooded and about forty feet high. Its southwestern end, known as **South Point**, is about sixty feet high, partly wooded and partly cleared and settled. Its shores, especially the eastern shore, are much indented by coves, some of which afford anchorage for vessels of light draught; but this eastern shore is very foul,—there being many bad ledges to the eastward of it, some of which are a mile from the island.

Between Matinicus and Ragged islands are what is called **Matinicus Roads**, and sometimes **Ragged Island Roads**; but this anchorage is only suitable in light winds and calms.

Matinicus Harbor.

Of the many coves indenting both shores of Matinicus Island, **Hall's Cove** and **Burgess' Cove** on the western shore, and **Condon's Cove, Old Cove** and Matinicus Harbor on the eastern shore, are the principal. Only the last named is, however, available for strangers, and that only in northerly, southerly and westerly

Description of Penobscot Bay. winds. It lies about midway between the northern and southern ends of the island, and is partially sheltered from easterly winds by **Wheaton's Island**—a low, bare, rocky islet about four hundred yards long **NE.** and **SW.** and having several houses on it. This island is only about thirty yards from the shore of Matinicus, with which it is connected at low water. The harbor, which is about four hundred yards in diameter, is sheltered from northerly winds by **Young's Point**, its northern point of entrance, and by **Indian Ledge**, a bare ledge lying off that point and joined to it at low water. Between this ledge and Wheaton's Island is good anchorage in from three to four and a half fathoms; but the more sheltered parts of the cove have only from four to ten feet at low water. It has been proposed by the U S. Engineers to build breakwaters from Young's Point to Indian Ledge, and from the latter to **Dexter's Ledge**, which lies in the middle of the harbor. When these have been built, the harbor, though small, will be well sheltered from all winds.

Between Matinicus and Ragged islands lie two islets,—the northernmost, which is nearly midway between the two, called Ten-Pound Island, and the other, which is close to the northern shore of Ragged Island, called Pudding Island. Ten-Pound Island lies **N NW.** and **S SE.**, is a little over five hundred yards long, low on its northern end, but rising with a very gradual slope to a height of forty feet at its southern end. It is rocky and bare of trees except for a few small clumps on the higher lands. Pudding Island lies about a hundred and fifty yards from the northern shore of Ragged Island, off what is known as **Wilson's Cove**. Its direction is **N.** and **S.**, and it is only about an eighth of a mile long, rocky, and barren except for a few scrubby spruce and firs on its summit. Both of these islets are tolerably bold-to.

Ten-Pound and Pudding Islands.

No Man's Land. No Man's Land is a small, wooded island, about fifty feet high and five hundred yards long, lying about seven-eighths of a mile to the eastward of Northeast Point of Matinicus. Its shores are bold-to. Between it and Northeast Point, but rather nearer the latter, is a small, bare island, called **Two-Bush Island.** The bearing from Northeast Point to No Man's Land is **E.** by **N.** ½ **N.**

NE. by **N.** from Matinicus Rock Light-houses, four miles distant, lies Wooden Ball Island, narrow and rocky, from fifty to sixty feet high, almost entirely bare of trees except on its western side near the middle, where there is a small clump, and a single tree on **Northwest Point**, its northern end. The island lies **NE.** and **SW.**, is about a mile long, and, about two-thirds of the way from Northwest Point to its southern end, is nearly separated into two parts by a narrow cove called **Back Cove**. Here the land is quite low, forming a sort of valley between the two hills, and has a couple of houses upon it. This is known as **The Low Place**, and gives the island, when viewed from the southward, the appearance of two islands separated by a narrow strait. The shores are bold-to.

Wooden Ball Island.

Wooden Ball Island lies about two miles and three-quarters to the eastward of Matinicus Island and three miles **W.** by **S.** ½ **S.** from Seal Island, or **Matinicus Seal Island**, as it is sometimes called, to distinguish it from Machias Seal Island. It is the easternmost of the group of outlying islands off Penobscot Bay, and bears from Matinicus Rock Light-houses **NE.** ¼ **E.**, distant seven miles and a half. It is of irregular shape, lies about **E NE.** and **W SW.**, is a mile long, very narrow and undulating (the land varying from twenty to sixty feet in height) and entirely bare of trees. Its eastern end is quite low,—being in places but a little elevated above high-water mark; while its western end, which is called **Western Head**, is sixty feet high, bare and steep. From Northeast Point (the northern point of Matinicus) this head bears **E.** ¼ **S.**, distant six miles. The dangerous ledges known as the **Malcolm Ledges**, which are bare at low water, lie midway between Seal Island and Wooden Ball Island.

Seal Island.

The eastern point of entrance to Penobscot Bay is formed, as before mentioned, by Isle au Haut, a large island, nearly five miles long, with an average width of a little over two miles, lying about **NE.** by **N.** and **SW.** by **S.** It is very high,—the highest part being in the middle and formed by two peaks with a depression between them, having somewhat the appearance of a saddle. The rise of the land is gradual from the northern and southern ends towards the middle, and it is in most cases wooded to the summit. The highest point is four hundred feet above sea-level, and on its eastern and western sides it is very steep. Its eastern shore has a comparatively straight outline, with several outlying islands, and is comparatively bold-to. The western shore is very irregular,—being indented by several coves, some of which afford good shelter,—and is not safe to approach nearer than a mile and a half except on the sailing-lines for the different harbors, as there are many outlying ledges, some of which are always under water and very dangerous.

Isle au Haut.

On the southern side Isle au Haut extends into two high heads. The easternmost, forming the southeastern point and called Eastern Head, is a bluff, rocky head one hundred and twenty feet high, its southern and eastern faces almost perpendicular to a height of eighty feet, and composed of bare rocks, while the summit is mostly wooded. Off Eastern Head lies a rocky islet about forty feet high, and between five and six hundred yards long in an **E.** and **W.** direction, partly bare and partly wooded, and about one hundred yards from the head. It is called **Eastern Ear.**

Eastern Head.

Western Head. The southwestern end of Isle au Haut is a bluff, rocky head, about eighty feet high, quite steep, bare of trees, and called **Western Ear.** It is an island at high water,—being then separated by a very narrow and shoal passage from Western Head, the southwestern point of the island. Between these two is formed a large bay about a mile and a half wide, but not safe to approach on account of the dangerous ledges in the vicinity.

On the western side of Eastern Head is **Head Harbor**, formed by a long narrow cove making into the southern shore of Isle au Haut, and affording anchorage in from eight feet to four fathoms; but it is not safe, nor are the other coves on this shore of the island.

Description of Penobscot Bay.

Several islands and islets lie off the eastern shore of Isle au Haut in Jericho Bay; and, having many outlying ledges, much obstruct the passage through that bay to Merchant's Row and Eggemoggin; but they are not in the way of vessels bound into Penobscot Bay by the regular channels. Of these islands, **Great** and **Little Spoon** islands are the easternmost,—the former lying two miles and a half to the eastward of Eastern Ear and the latter half a mile to the westward of the former. Both islands have already been described on page 164, in the approaches to Burnt-Coat Harbor. The passage between the Spoon Islands and Isle au Haut is not considered safe for strangers, although it has good water. But little is known of it, and there may be hidden dangers which would render its navigation unsafe.

York Island.

About a mile and a quarter to the northward of the Spoon Islands and a quarter of a mile from the eastern shore of Isle au Haut lies York Island, extending **N NE.** and **S SW.** a little over three-quarters of a mile in length, bare in the middle, and rising at its northern end to a peak one hundred feet high, the sides of which are marked with firs and small spruce trees. The passage between it and Isle au Haut is full of ledges and bare rocks and is not safe for strangers, although there is a harbor for light-draught vessels between it and Isle au Haut which is often used by fishermen.

About half a mile to the southeastward of York Island and a mile to the northward of the Spoon Islands lies a group of three islets called **The Cow-Pen.** They are mere masses of bare rock,—the northernmost being the largest,—and are surrounded by dangerous ledges. Until all of these ledges are marked by spindles and buoys, the passage between them and **Fog Island** (see page 184) must not be attempted by strangers.

Moore's Harbor.

On the western side of Isle au Haut, about one mile and a half above Western Ear, there makes in a narrow cove, called **Duck Harbor.** There are two or three houses on its shores, but it is not considered safe for strangers. Two-thirds of a mile to the northward of Duck Harbor, and a little over two miles above Western Ear, makes in a large cove to the northeastward, called Moore's Harbor. There is good water in it, but as there are several outlying ledges which are not buoyed, strangers must not attempt to enter. Its northern point of entrance, called **Moore's Head,** is about sixty feet high, and composed of white rocks so dotted with scrubby trees as to give it a somewhat mottled appearance.

Isle au Haut Thoroughfare.

On the northern side of Moore's Head makes in the principal harbor of the island, known as Isle au Haut Thoroughfare, which is contained between this shore and a large island, called Kimball's Island, lying close in with it, and forming the northern side of the harbor. Though known as a Thoroughfare, there is really no passage through,—a bar, dry at low water, extending across the northeastern end of the passage.

Kimball's Island.

Kimball's Island lies nearly **E.** and **W.,** and is a mile and five-eighths long. At its nearest point to Isle au Haut it is only one hundred yards off, which is here the narrowest part of the Thoroughfare. It is one hundred and sixty feet high in the middle, sloping gradually towards the eastern and western ends, and again at the western end rising to a steep, bluff head, known as **Kimball's Head.** With the exception of this head, which is thickly wooded, the island is a mere bare rock, dotted with clumps of stunted spruce standing on the summit and clinging to its sides. On the southern side of this head makes in **Marsh Cove,** which is not safe on account of the dangerous **Marsh Cove Ledges,** extending off in an easterly direction nearly half a mile from **Marsh Cove Head,** on its southern side. This head is about sixty feet high, and forms the northern point of entrance to Isle au Haut Thoroughfare.

EAST PENOBSCOT BAY

is the name given to that portion of Penobscot Bay lying between Isle au Haut and Deer Isle on the east and the Fox Islands on the west, and sometimes called **Isle au Haut Bay.** It affords a safe and easy entrance to the upper part of Penobscot Bay from the eastward through a wide and very deep passage, with a good working channel, and is almost exclusively used by vessels from the eastward bound to Camden, Duck-Trap, Belfast, Castine, or Penobscot River. The **Fox Islands,** which separate this bay from West Penobscot Bay, are a group composed of two large and innumerable small islands, lying nearly midway between Isle au Haut and the western shore of West Penobscot Bay. The southernmost, known as Vinal Haven Island, is about five miles long in a **NE.** and **SW.** direction, and very irregular in shape,—being cut up by long and narrow coves, most of which have good water in them. It presents a very diversified surface,—being for the most part undulating and wooded, with occasional cleared fields and small settlements near the shore. On the north it is separated from North Haven Island by a wide and good, though somewhat crooked, passage known as Fox Islands Thoroughfare.

Vinal Haven Island.

The southern point of Vinal Haven is three miles and a half **NE.** by **E.** from Saddle-back Ledge Light-house and nearly seven miles **NE.** by **E.** ½ **E.** from Western Ear, (at the southwestern end of Isle au Haut.) There are a large number of islands and islets lying to the southward of it, and extending off between two and three miles, rendering an approach to it without a pilot unsafe. On its southwestern side, near the southern end, there is an excellent harbor, with anchorage in from ten feet to four fathoms at low water, called **Carver's Harbor.** This, however, properly belongs to West Penobscot Bay, and will be described in place. The red brick tower seen on an island off the western side of the entrance is Heron Neck Light-house, which is a guide to this harbor and also to Hurricane Sound, running along the western shore of Vinal Haven Island in a northerly direction.

North Haven Island lies nearly E. and W., and is about five miles and a half long and very irregular in shape. Its shores are undulating, of considerable height, and diversified with woods and cleared and settled lands, especially near the shore. Several small islands lie off its southeastern end and in the eastern entrance to Fox Islands Thoroughfare. Of these, Burnt Island lies nearest to North Haven; Stimpson's Island next to the southward; Calderwood's Island a little to the eastward of Stimpson's, and Babbidge's Island to the eastward of Calderwood's,—being the easternmost of the group. Between Burnt Island on the north and Stimpson's and Calderwood's islands on the south leads a passage called **Little Thoroughfare**, through which fourteen feet may be carried, but which is not safe for strangers.

North Haven Island.

Of the islands to the southward of Vinal Haven Island, the most easterly and noticeable is Brimstone Island, two miles **SE.** by **S.** from the southern end of Vinal Haven and a mile and three-quarters **W.** ½ **N.** from Saddle-back Ledge. It is about three-eighths of a mile long **E.** and **W.**, of an oval shape, nearly one hundred feet high, and has a scattered growth of trees, mostly near its eastern end. The rocks have a greyish appearance. About three-eighths of a mile to the northeastward of it lies a small rocky islet about twenty feet high, called **Diamond Rock**; and an eighth of a mile to the southward of it lies **Little Brimstone Island**, in reality a group of four joined at low water, and all low and bare, with the exception of the westernmost and largest, which is about twenty feet high at its western end, with a few trees and a single hut. There are several bare rocks and islets to the eastward of the Brimstone Islands, which will be described under the head of dangers.

Brimstone Island.

Otter Island. A little over three-quarters of a mile to the westward of Brimstone Island will be seen Otter Island, lying **NE.** and **SW.**, and half a mile long. This is a remarkable looking island,—the rocks being of a peculiar reddish yellow, and cut into a number of round heads. The summits are crowned with trees in small clumps. It is a mile and a half to the southward of the southern end of Vinal Haven, and will appear as a rocky and thinly wooded island about sixty feet high with an undulating surface.

Roberts' Islands. Roberts' Islands are two small rocky islets six hundred yards to the northwestward of Otter Island and a mile and a quarter to the southward of the southern end of Vinal Haven. They are barely separated,—the easternmost and largest being about a quarter of a mile long and about seventy feet high at its western end, while the western islet is only about one hundred and fifty yards in diameter and fifty feet high. Both are bare of trees, but there is a single house near the eastern end of the larger island.

Hay Islands. Hay Islands, or **Lane's Knubble**, as they are often called, lie about three hundred yards **N NE.** from Otter Island and seven-eighths of a mile to the westward of Brimstone Island, and form a group of three joined at low water by ledges. The southernmost and largest lies **NE.** by **E.** and **SW.** by **W.**, is about four hundred yards long, sixty feet high, and entirely bare. The others are mere bare rocks.

Carver's Island. Half a mile to the northward of Hay Islands and three-quarters of a mile to the southward of the southern end of Vinal Haven lies Carver's Island, about four hundred and fifty yards long **NE.** and **SW.**, low, rocky and entirely bare of trees. There is a dangerous ledge about midway between it and Hay Islands, called **Middle Ledge**.

A mile and a half **N.** by **W.** from Brimstone Island, five-eighths of a mile **N.** by **E.** from Carver's Island, and half a mile to the eastward of the southern end of Vinal Haven, lies Sheep Island, thinly wooded, somewhat steep, and sixty feet high. It extends about **N.** by **E.** and **S.** by **W.** for a length of seven hundred yards, with an average width of an eighth a mile, and is quite bold-to. There are many dangerous ledges on its northern, eastern and western sides; but on the southern side, between it and Carver's Island, is a good passage, obstructed only by two ledges with eleven and twelve feet water. The passage into **Roberts' Harbor**, on the southeastern coast of Vinal Haven, leads to the westward of this island.

Sheep Island.

Narrows Island. Narrows Island lies close in with the Vinal Haven shore, separating Roberts' Harbor from Arey's Cove. It is about six hundred yards to the northward of Sheep Island; but the space between them is full of dangerous ledges, called the **Clam Ledges**. This island lies **N NE.** and **S SW.**, is half a mile long, in no place more than a quarter of a mile wide, and is undulating, thinly wooded, about forty feet high at its highest point, and has several houses on its western shore near the northern end.

Nearly half a mile to the northeastward of Sheep Island, and about five-eighths of a mile to the eastward of Narrows Island, lies **Green Ledge**, a small, rocky islet, about thirty feet high, of an oval shape and about one hundred and fifty yards in diameter. Five-eighths of a mile **N.** by **E.** ½ **E.** from this lies House Ledge, a dry rock about fifty yards square, and surrounded by ledges out at three-quarters ebb. House Ledge lies about three-eighths of a mile from the nearest part of the Vinal Haven shore. The channel into **Arey's Cove** (a small, shallow indentation penetrating the southeastern side of Vinal Haven Island just to the northward of Narrows Island) leads between this ledge and Green Ledge; but the passage is much obstructed by dangerous detached ledges.

House Ledge.

A little over half a mile to the northward of House Ledge, on the Vinal Haven shore, is **Calderwood's Point**, of moderate height, cleared and cultivated, with higher wooded lands behind it to the northward and westward. About **N NE.** from it, distant nearly half a mile, lies Smith's Island, bare, of an oval shape, and rising to a height of forty feet at its summit. It is about a quarter of a mile from the eastern shore of Vinal Haven Island; but the space between the two is almost entirely occupied by several small, bare, rocky islets and dangerous ledges, most of which are out at half-tide. Smith's Island lies off the entrance to **Smith's Cove**, a narrow, shallow indentation of no importance.

Smith's Island.

A little over a quarter of a mile to the northward of Smith's Island, and about four hundred yards from shore, lies Stoddart's Island, an eighth of a mile in diameter, about forty feet high in its highest part, with a few scattered trees on its surface, but otherwise bare. It is connected at low water with **Brown's Island**, lying one hundred yards to the northwestward, of very irregular shape, entirely bare, and only about twenty feet high. This island is joined to Vinal Haven Island by a bar which is dry at low water. **Stoddart's Island.**

Five-eighths of a mile to the northward of Brown's Island makes in Deep Cove, semicircular in shape, about four hundred yards wide at its entrance, and penetrating the eastern shore of Vinal Haven Island for nearly the same distance. Its southern shore is formed by **Coombs' Hill**, rising to a height of one hundred and twenty feet and entirely bare on the summit, but fringed at its base with a scanty growth of spruce and fir. The point on the northern side of the cove is about sixty feet high and thinly wooded on its eastern slopes. Two bare ledges lie on its southern side close in with the shore. To the northward the point is joined at low water to a rocky islet about seven hundred yards long N. and S., nearly bare of trees, about forty feet high, but with gentle slopes, and low and flat near the water; and this again to another islet, sixty feet high and thinly wooded, called **Bluff Head**, and forming the eastern point of entrance to a wide cove, of very irregular shape and full of islands, called Seal Bay. The mouth of this cove, which lies between Bluff Head on the east and **Long Island** on the west, is much obstructed by the **Hen Islands**, two small, rocky islets joined at low water, lying exactly in the middle of the entrance. The easternmost and largest, which is a quarter of a mile long, forty feet high and thinly wooded, lies an eighth of a mile to the westward of Bluff Head; but the passage between them is contracted to a width of one hundred yards by a long ledge making off from the island. The western islet is about two hundred yards long, low, flat and wooded, and lies nearly an eighth of a mile to the westward of the larger island. **Deep Cove.** **Seal Bay.**

Calderwood's Neck, on the northern side of Seal Bay, separates this bay from the entrance to Fox Islands Thoroughfare, and is in reality an island, though connected with Vinal Haven by a causeway. Its surface is undulating,—varying in height from sixty to one hundred and sixty feet,—and is diversified with woods and cultivated fields dotted here and there with houses. The entrance to Fox Islands Thoroughfare, between this neck and Babbidge's Island, is a mile and three-eighths wide, with a channel of from five to ten fathoms. **Calderwood's Neck.**

That part of Seal Bay contained between Calderwood's Neck and Long Island is called **Winter Harbor**, and affords good anchorage for vessels of twelve feet draught. At the head of the bay is a small, shallow stream called **Pleasant River**. The shore of Calderwood's Neck is quite bold-to, and may be safely approached within three hundred yards with not less than four fathoms. In many places there are six fathoms within one hundred yards.

The Fox Islands Thoroughfare is one of the most important of the inshore passages, used by coasters bound to the eastward or westward, between Passamaquoddy Bay and Cape Elizabeth. In connection with Moos-a-bec Reach, Mount Desert Eastern Passage, Cranberry Island Passage and Deer Island Thoroughfare or Eggemoggin Reach, it forms an almost uninterrupted inshore passage, with comparatively smooth water and a depth of not less than fifteen feet at low water, from Englishman's Bay to West Penobscot Bay. Its eastern entrance bears from the western end of Deer Island Thoroughfare about W. ¼ N., distant nearly four miles, and is somewhat difficult of recognition in the absence of any distinguishing marks, as the passage is apparently closed by the overlapping points of land to the westward. **Fox Islands Thoroughfare.**

The eastern entrance to Fox Islands Thoroughfare is contained, as above mentioned, between Babbidge's Island on the north and Calderwood's Neck on the south, and is almost unobstructed. Babbidge's Island, on the northern side, lies NE. and SW., and is about five-eighths of a mile long, barren, rocky, of moderate height,—varying from ten to sixty feet,—and undulating. It is for the most part bare of trees; but at its eastern end there is a thick grove of scrubby fir and spruce, and an occasional growth of scrub along its southern face. It is surrounded by ledges, and is not safe to approach on its southern side nearer than three-eighths of a mile. The shores of Vinal Haven, on the contrary, are bold-to,—from four to seven fathoms being found within two hundred yards of the rocks. **Babbidge's Island.**

Calderwood's Island lies next to the westward of Babbidge's Island, from which it is separated by a shallow passage a quarter of a mile wide and full of ledges. It is about five-eighths of a mile long ENE. and WSW.; and seen from the southward and westward appears of moderate height, nearly bare of trees, with a high, rocky head near the middle on its southern side, which has a single tall spruce tree upon it, forming a somewhat remarkable feature, as there are no other trees near it. **Calderwood's Island.**

There is a passage, with eight feet at low water, between Calderwood's Island and **Stimpson's Island**, (see Fox Islands Thoroughfare,) which leads into **Little Thoroughfare**, before mentioned as contained between North Haven and Burnt Island on the north and Calderwood's and Stimpson's islands on the south. This passage must not be attempted without a pilot.

Burnt Island lies next to the northward of Calderwood's Island, and is joined to the southeastern end of North Haven by a mud-flat and ledges crossed by a causeway. It lies E. and W., is about half a mile long, seventy feet high at its highest point, and for the most part wooded. Several bare ledges and rocks lie off its eastern shore about an eighth of a mile distant; and it should not, therefore, be closely approached. On its northern side makes in a cove about three-eighths of a mile in diameter, called **Mullen's Cove**, in which anchorage in ten feet may be found; but there is a bad half-tide ledge near the head of the cove. Mullen's Head, the northern point of entrance to this cove, is a bluff, wooded head, over a hundred feet high and steep-to. On its northern side **Burnt Island.** **Mullen's Head.**

a line of ledges and sand three hundred and fifty yards long connects it, at low water, with a round, rocky islet about one hundred yards in diameter, twenty feet high, and thinly fringed with fir trees.

Oak Hill. Between Mullen's Head and Oak Hill, a mile and an eighth to the northward, is a long cove, formed by the projection of the two heads from the main shore of North Haven. From ten to fifteen feet may be found in it, but there is little shelter. The North Haven shore between the heads is undulating—varying from forty to one hundred feet in height,—and diversified with woods and cleared fields, with occasional houses. Oak Hill is about one hundred and fifty feet high, with a gradual rise, grassy, and entirely bare of trees except a small grove on its northeastern extremity. An eighth of a mile to the southward of its southeastern end are two low, rocky islets, surrounded by ledges and joined at low water, to which the common name **Hog Island** has been given.

A bare rock, called **The Downfall**, lies about three-eighths of a mile to the eastward of Hog Island and five-eighths of a mile E. by S. ½ S. from the southeastern end of Oak Hill; and nearly a quarter of a mile N. by E. ½ E. from this rock and five-eighths of a mile to the eastward of Oak Hill lies **Dagger Island**, oval in shape, an eighth of a mile long, thirty feet high, with somewhat steep faces and a very few trees on its eastern and western ends.

Sheep Island. A quarter of a mile to the eastward of Dagger Island, and one mile E. by S. ½ S. from Oak Hill, lies Sheep Island, oval in shape, a quarter of a mile long E. and W., seventy feet high, with somewhat steep faces, and a thin growth of spruce and fir on its slopes. On its western end there is a ledge two hundred yards long and bare at low water, called **Sheep Island Ledge.**

Bald Island. This island is the first prominent outlying island met with after passing Babbidge's Island, and may be approached within three hundred yards with eleven fathoms water. Half a mile NE. by E. ½ E. from it lies Bald Island, about two hundred and fifty yards in diameter, eighty feet high to a bald bare summit, steep and bold-to. There are, however, a few trees fringing the shore-line. This island lies five-eighths of a mile SW. by S. ½ S. from Eagle Island; and there is a good unobstructed passage between them, suitable for the largest vessels. In fact there is deep water among all of these outlying islands, but the passages are in many cases obstructed by ledges and rocks and are not safe without a pilot. That between Bald and Eagle islands is, however, excellent and safe.

Eagle Island. Eagle Island, which lies on the western side of the main channel of East Penobscot Bay, is easily recognized by the white light-tower on its northeastern end. It is of irregular shape, lies NE. and SW., is a little over a mile long, about sixty feet high at its southern end, and rises somewhat gradually to a height of one hundred and twenty feet near its northern end. At its northeastern extremity it terminates in a bluff head eighty feet high on which is the light-house; and nearly all along its eastern shore are precipitous faces from forty to seventy feet high. Alternate woods and bare slopes appear; and there are a number of houses on the higher slopes of the eastern side.

Eagle Island Light-house. Eagle Island Light-house, the guide through the main channel of East Penobscot Bay, is a stone tower thirty feet high, whitewashed, and attached to the keeper's dwelling, which is also white. It shows a fixed white light, of the fourth order of Fresnel, from a height of one hundred and six feet above sea level, visible fifteen miles. Its geographical position is

Latitude ..... **44° 13′ 3″ N.**
Longitude ..... **68° 46′ 4″ W.**

There is no fog-signal.

The Porcupines. Two rocky islets lie to the eastward and southeastward of the southern end of Eagle Island, at distances respectively of three hundred and six hundred yards. They are called The Porcupines; and there is good water (not less than twelve feet) between them, and a channel an eighth of a mile wide and with not less than thirteen feet between the westernmost islet and Eagle Island. The Porcupines are rocky and for the most part bare, (although there are a few trees in clumps here and there,) have steep faces and are bold-to. The southernmost islet is oval, three hundred yards long, sixty feet high to a bare summit, lies nearly NE. and SW., and has a smaller islet close to its southwestern end. The northernmost is irregular in shape, four hundred yards long NE. and SW., and about forty feet high. Both are to be left to the westward by vessels bound through the main channel.

On the eastern side of East Penobscot Bay, as you pass up the main channel to the northward of Kimball's Island, you will open to the eastward the labyrinth of islets lying between Isle au Haut and Deer Isle. Of these, the first one seen will be Merchant's Island, nearly a mile long, lying on the southern side of Merchant's Row, and appearing as two moderately high, wooded hillocks, lying NW. and SE. from each other, and joined by low land.

Merchant's Island. Several houses are seen on the slopes of the northern hill, which is much the lower of the two. This island, being the largest met with to the northward of Kimball's Island, is readily distinguished,—its southeastern end rising somewhat steeply to a height of one hundred and twenty feet, and bare of trees except on its extreme point, where there is a single lone spruce. From the summit of this high head the land descends to the northward regularly but rapidly nearly to sea-level, and the slopes and low lands are thickly wooded. The rest of the island is undulating, presenting alternately low lands and hills from twenty to forty feet high, partly wooded and partly cleared, with a group of houses on the northern shore near the western end.

Hardwood Island. Four hundred yards to the westward of the northern end of Merchant's Island will be seen a round, rocky islet about three hundred yards in diameter, and known as Hardwood Island. It is forty feet high, with somewhat steep faces and wooded. There is a good passage for vessels of not over twelve feet draught between this island and Merchant's Island.

A quarter of a mile to the southwestward of Hardwood Island lies **Ram Island**, about a hundred and fifty yards in diameter, nearly twenty feet high, with steep faces, and a solitary tree on its northern end. Five fathoms may be taken between this and Hardwood Island.

Nearly half a mile **W.** by **N.** from Ram Island, and a mile and three-quarters **N.** ¼ **E.** from Kimball's Head, lies **Channel Rock**, a bare rock about forty yards in diameter. Three-eighths of a mile to the westward of this and two miles **N.** by **W.** ¼ **W.** from Kimball's Head is **Scraggy Ledge**, a bare rock about one hundred yards in diameter. A quarter of a mile **N.** by **E.** ½ **E.** from this rock lie two rocky islets **NW.** and **SE.** of each other, connected at low water by ledges and known as Halibut Ledges. The northernmost, which is the largest, is about a hundred and fifty yards in diameter with steep faces; and the southernmost is about eighty yards in diameter. Three-eighths of a mile to the northward of these ledges lies **Sparrow Island**, with another and much smaller islet close to the southern end. It is oval in shape, lies nearly **E.** and **W.**, is rocky, forty feet high at its eastern end, and bare of trees. **Farrel's Island**, on the northern side of Merchant's Row and at its western end, is a rocky island lying **W NW.** and **E SE.**, five hundred yards long, forty feet high at its highest point, with steep faces and thinly wooded. It is not approached by vessels bound up East Penobscot Bay, as it is too far to the eastward. Scraggy Island, nearly three-quarters of a mile **N.** ¼ **W.** from Sparrow Island and about three-eighths of a mile **S SW.** from Mark Island Light-house, (at the western end of Deer Island Thoroughfare,) is low and rocky, about three hundred and fifty yards long, and has a growth of stunted fir and spruce upon it It lies nearly **NW.** and **SE.**, and its southwestern end is a mere bare rock, destitute even of moss. It is the westernmost of the islets between Kimball's and Mark islands.

Halibut Ledges.

Scraggy Island.

Mark Island (before described, page 177) lies in the western entrance to Deer Island Thoroughfare, and is easily distinguished by the light-house upon it. It lies **E.** by **S.** ½ **S.** from the middle of Babbidge's Island, distant three miles and a half, (which is here the width of the bay channel,) and about three-eighths of a mile **N NE.** from Scraggy Island. The light-house, which is on the western end of the island, is the guide to Deer Island Thoroughfare, and appears as a square brick tower twenty-five feet high, whitewashed, and attached to a low white dwelling. It shows a fixed white light, of the fourth order, from a height of fifty-two feet above the sea, visible twelve miles. Its geographical position is

Mark Island and Light-house.

Latitude	44° 8′ 3″ N.
Longitude	68° 42′ 12″ W.

Half a mile **N.** by **E.** ½ **E.** from Mark Island is Andrews' Island, lying nearly **E.** and **W.**, about four hundred yards long and sixty feet high, with steep faces and thinly wooded. It is seven-eighths of a mile to the westward of Thurlow's or Crotch Island, and nearly five-eighths of a mile to the southward of Deer Isle. Between this island and **Fifield's Point**, the southwestern point of Deer Isle, lie two low, rocky and thinly wooded islets surrounded by ledges, and not named.

Andrews' Island.

The eastern shore of East Penobscot Bay, from nearly abreast of Babbidge's Island to the entrance to Eggemoggin Reach, is formed by the western side of Deer Isle, which extends in a nearly **N.** and **S.** direction, with a very irregular outline, and showing lands partly cleared and cultivated and partly wooded. It is of moderate height, and fringed with peculiar whitish and reddish rocks. On this shore there are several large coves, forming harbors, resorted to by fishermen and others who are familiar with the coast. Of these, the first met with to the northward of Deer Island Thoroughfare is **Burnt Cove**, making into the western shore about one mile from the southwestern end of the island and about a mile and a half to the northward of Mark Island. It runs nearly **E.** and **W.**, is about half a mile long and from two hundred and fifty to three hundred yards wide, and may be safely entered from the westward, as there are no dangers except *a ledge, out at low water*, lying in the middle, near the western end of the cove.

Deer Isle.

Crockett's Cove makes in just to the northward of Burnt Cove,—the two having a common entrance between Fifield's Point (the southern point of entrance to Burnt Cove) and **Bear Island**, which lies off the southern end of **Stimpson's Point**, (the western point of entrance to Crockett's Cove.) This cove runs nearly **NE.** and **SW.**, and is about one and three-quarter miles long; but for about one-third of this distance is bare at low water, and is not passable for more than six hundred yards above its mouth. Its eastern shores are steep and thickly wooded, the western also wooded, but much lower.

Crockett's Cove.

About a mile and a half to the northward of Bear Island is a small indentation, called **Small's Cove**, which affords no shelter,—being bare at low water. Just to the northward of it makes in Southwest Harbor, where there is quite a settlement, known as **South Deer Isle.** Southwest Harbor is formed between the western shore of Deer Isle and a small island, not quite half a mile long, called **Jordan's Island**, or **Sheep Head Island**, lying about three-eighths of a mile from shore. Although unobstructed and having good anchorage in three and a half fathoms, it is open to southerly winds, and is of little importance as a harbor,—there being much better ones in the vicinity, either in Eggemoggin Reach, Deer Island Thoroughfare, or among the Fox Islands;—and it is never resorted to by any but the fishermen and coasters who belong there.

Southwest Harbor.

About one and a quarter miles above Jordan's Island, and nearly five miles above Deer Island Thoroughfare, is Saunders' or **Denning's Point**, the northwestern point of Deer Isle. It lies nearly due **E.** from Eagle Island, from which it is distant about a mile and a half. It is a thinly wooded, gently sloping headland, rising to a height of sixty feet, and has perpendicular faces about ten feet high. It is very bold-to,—fifteen fathoms

Saunders' Point.

being found within four hundred yards; but there is a bad half-tide ledge close-to, off the pitch of the point. At this point the shore of Deer Isle turns abruptly to the westward and northwestward, running to the northern point of the island, on the southern side of Eggemoggin Reach.

Hardhead Island. In mid-channel between Eagle Island and Denning's Point, but nearer to the former and a little to the northward of a line joining Eagle Island Light-house with Denning's Point, lies Hardhead Island, a bare, rocky islet, lying nearly **E.** and **W.**, about three hundred yards long and sixty feet high,—with steep faces about twenty feet high. It is bold-to on all sides, and may be approached anywhere, except on its northern side, within fifty yards with not less than five fathoms. It may be passed on either hand; but it is customary to pass between it and Eagle Island.

When abreast of Eagle Island Light-house the course turns more to the northwestward, and two large islands will be seen in that direction and from three-quarters of a mile to a mile off,—on each side of the passage. That to the eastward, which appears as a high, steep island, with precipitous faces, and thickly wooded at its western end, is called Bradbury Island.

Bradbury Island. It lies **E.** by **S.** and **W.** by **N.**, is about two-thirds of a mile long and one hundred and seventy feet high at its western end. The rest of the island is partly wooded and partly cleared. It is bold-to on all sides except its eastern end, where a ledge, partly bare at low water, makes off nearly to **Crow Island.** This latter island, which lies a quarter of a mile to the eastward of Bradbury, is about four hundred yards long **E.** and **W.**, has steep faces, is wooded at its eastern and western ends but bare in the middle, where it is about twenty feet high. There is no safe passage between it and Bradbury Island, owing to the ledge above mentioned; but a good channel exists on its eastern side, leading between it and Pickering's Island, but obstructed by ledges which are not buoyed.

The island on the western side of the main channel is Butter Island, and appears high and rocky, extending about **N NW.** and **S SE.** It is of irregular shape and about seven-eighths of a mile long, gently sloping on the southern side, and for the most part cleared, with a few houses upon it; but at its northern end it rises to a hill about one hundred

Butter Island. and seventy feet high, with precipitous faces to a height of about twenty feet on its eastern and western sides, and thinly wooded. At the eastern end of the island, nearly midway between its northern and southern sides, there rises a steep, round hill one hundred and eighty feet high, without trees, and with bare ledges on its summit and slopes. This hill is very noticeable. Butter Island lies half a mile to the northward of Eagle Island, and between it and that island there is a wide and deep passage leading from East into West Penobscot Bay; but the many ledges and sunken rocks it contains render it unsafe at present for strangers to attempt it. If these ledges were buoyed, this would be a safe channel between the two bays.

On approaching Bradbury Island, the northern shore of Deer Isle will be seen stretching away to the eastward from Denning's Point to Eggemoggin Reach, and appearing as moderately high undulating country, partly wooded and partly cleared, and showing a few houses here and there. To the northward of this will be seen Little Deer Island with the high wooded lands of **Brooksville** appearing over it. About a mile and a half to the eastward of Denning's Point, on the north-

Northwest Harbor. ern shore of Deer Isle, makes in Northwest Harbor, upon which is the settlement of **Deer Isle.** This harbor is formed by a long cove of irregular shape making in to the southeastward for about a mile and three-quarters, nearly joining **Long Cove**, which makes off from the northwestern end of Southeast Harbor,—there being but a very narrow strip of land, called **The Haul-over,** separating the heads of these two bays. This harbor is seldom used except by the people of Deer Isle, and is of little importance as a harbor of refuge, as it is out of the track of vessels, and much better and safer harbors are readily found both in Eggemoggin Reach and among the Fox Islands. It may, however, be safely entered, as there are no dangers; and it is only necessary to keep midway between the two shores to carry not less than twelve feet to a comfortable anchorage. No detailed description will be necessary.

Little Deer Island. Off the northeastern end of Deer Isle lies Little Deer Island, joined to the larger island at low water. It is about two miles and three-quarters long, and seen from the southwestward will appear of considerable height, with undulating surface,—the heights varying from forty to two hundred and thirty feet. The land rises very gradually in some places, and in others abruptly, forming steep hills, most of which are bare, and the low lands between them mostly cleared and settled, though occasional groves of trees are seen.

A number of small islands lie off the southern side of Little Deer Island, but they are of no importance. **Carney's Island,** the largest, lies midway between the southern point of Little Deer Island and the northeastern end of Deer Isle, and has already been described in the description of Eggemoggin Reach as a thickly wooded islet, about twenty feet high, with steep faces. (See page 169.) **Stave Island**, which lies in Eggemoggin Reach off the southeastern end of Little Deer Island, has also been described on page 169, and is about eighty feet high, partly wooded and partly cleared, with several houses near the middle.

On the western side of Little Deer Island lie a number of rocky islets, studding the area between it and Pickering's Island. They are of little importance to mariners, as this passage, although containing deep water, is too dangerous for strangers to attempt. The southernmost of these islets is known as Bar Island, and is in reality two, connected at low

Bar Island. water by a bar. Each is about twenty feet high with steep faces, and has a few trees. They lie about half a mile **W.** from the southwestern point of Little Deer Island and three-quarters of a mile **E.** from the southeastern end of Pickering's Island. Half a mile **W.** by **N.** ½ **N.** from Bar Island, and six hundred yards **N.** by **E.** ½ **E.** from the eastern end of Pickering's Island, lies **Eaton's Island,** also two islets connected at low water. The southernmost and largest is three hundred yards in diameter, about twenty feet high, and thinly wooded with a scrubby growth The other is about a

hundred and fifty yards long, about the same height as the southern islet, and also thinly wooded. Thirteen feet at low water may be taken between this island and Pickering's Island through a very narrow and crooked passage;—but strangers must not attempt it.

Two round, bare rocks, about fifty yards in diameter and surrounded by ledges, lie **N.** and **S.** of each other about midway between Bar and Eaton's islands, but nearer to the former, from which they are distant an eighth of a mile. These are the Crockett Islands; and there is an unobstructed passage nearly two hundred yards wide between them and Bar Island, through which not less than twenty-one feet can be carried. Between them and Eaton's Island there is no safe passage;—a dangerous half-tide ledge lying midway. Five-eighths of a mile to the northward of Bar Island, and close in with the western shore of Little Deer Island, lies **Sheep Island**, about two hundred yards long, forty feet high, with steep faces and entirely bare. Five fathoms may be taken between it and Little Deer Island; and the channel between it and Eaton's Island is about three-eighths of a mile wide and has ten fathoms in it, but is obstructed by bare and sunken ledges. **Crockett Islands.**

Scott's Islands lie half a mile to the northwestward of Sheep Island and nearly three-quarters of a mile to the northward of Eaton's Island. They are two, lying **E.** and **W.** of each other, three hundred yards apart, and with no passage between them. The easternmost, which is a quarter of a mile from the western shore of Little Deer Isle and off the mouth of **Billings' Marsh Cove**, is about an eighth of a mile in diameter, low, with steep faces about ten feet high, and thinly wooded. Between it and Little Deer Island there is a safe channel nearly two hundred yards wide with not less than eight fathoms. The western islet is triangular in shape, three hundred yards long, thirty feet high, and has a few trees near its northern end. Off the northwestern end of Little Deer Island, at a distance of three hundred and fifty yards, lies **Birch Island**, oval in shape, about an eighth of a mile long **N.** and **S.**, twenty feet high, with steep faces and a few trees on it. Between it and Little Deer Island is a passage one hundred and fifty yards wide through which not less than fifteen feet may be taken. **Scott's Islands.**

Pickering's Island lies nearly midway between Bradbury and Little Deer islands, and seen from the main channel will appear as a large, high, rocky and for the most part wooded island, undulating,—varying in height from forty to eighty feet,—partly wooded and partly cleared, with a few houses on its eastern slopes. It lies **NW.** by **W.** and **SE.** by **E.**, is of very irregular shape, and about a mile and a quarter long. Off its south-eastern end extends a bar three hundred yards long, connecting this island with a low, round islet about a hundred and fifty yards in diameter, with a few trees near its southern extremity. Between this island and Bradbury Island is a channel nearly a mile wide, through which not less than eigh oms can be carried; but it is not safe for strangers, as a number of dangerous ledges lie nearly midway between the two islands. **Pickering's Island.**

On passing between Butter and Bradbury islands a number of islands and islets will appear to the northward, northeastward and northwestward. Of these the largest and most prominent is Great Spruce Head Island, lying about three-quarters of a mile **NW.** by **W.** from Butter Island. It extends about **NE.** by **N.** and **SW.** by **S.**, and its northern head (which will first appear) is composed entirely of bare, white rocks, rising to a height of two hundred and fifty feet. It is the highest land in the vicinity, and presents quite a remarkable appearance. The eastern slopes of the island are partly wooded and partly cleared, and are much lower than the northwestern head,—being not more than eighty feet high. On its northern side there passes another channel, which leads, between Beach Island on the north and this and Little Spruce Head on the south and west, into West Penobscot Bay. **Great Spruce Head Island.**

Beach Island, seven-eighths of a mile to the northward of Great Spruce Head and on the western side of the channel, when seen from the southward will show precipitous faces about twenty feet high, behind which the land rises to a height of sixty feet, with a very gentle slope towards the eastern end. It lies about **W NW.** and **E SE.**, is about eleven hundred yards long, of irregular shape, and bare of trees with the exception of a very few on the low land between its eastern and western heads, and a small growth on the northern slopes of the western head,—the latter, however, not being visible from the southward. There are two or three houses on its eastern side near the beach. To the eastward of it lie a number of small islands in the Middle Passage, of which may be mentioned Little Spruce Head, Colt Head, Horse Head and Mark islands. **Beach Island.**

Between Butter and Great Spruce Head islands lie several rocky islets which deserve mention here. They are seven in number, and lie in a line **NE.** by **N.** and **SW.** by **S.**, nearly in the middle of the passage. Of these, the two northernmost, lying about two hundred yards **NW.** ½ **W.** from the northern end of Butter Island, with which they are connected at low water, are bare of trees, rocky, with steep faces, about three hundred yards in diameter, and ranging from twenty to sixty feet in height. Two hundred yards to the southwestward of the southernmost islet and four hundred yards from Butter Island are the Southern Barred Islands, two narrow, rocky islets connected at low water, and lying **NE.** and **SW.** The northernmost and largest is a quarter of a mile long, eighty feet high, steep and nearly bare. The southern islet is three hundred and fifty yards long, quite low, with a single tree near the middle. To the southward of these extends a line of ledges and bare rocks to a distance of a quarter of a mile;—some of the rocks being twenty feet out at high water. **Southern Barred Islands.**

Little Spruce Head Island is a remarkable looking islet, about three-eighths of a mile long **N.** ¼ **E.** and **S.** ¼ **W.**, with a steep bluff head one hundred feet high at its northern end. A thin fringe of woods lines the base of the head.

Horse Head Island lies a little over a mile **W.** by **S.** from Beach Island, about five-eighths of a mile **N. ½ E.** from Little Spruce Head Island, and nearly two-thirds of a mile to the southwestward of Colt Head. It is easily recognized as the only densely wooded islet in the vicinity,—being about forty feet high and covered with a very thick growth of fir and spruce.

Colt Head Island is a small, rocky island, about forty feet high, bare of trees, and lies nearly half a mile to the westward of Beach Island. It is three hundred yards long, and lies nearly **N.** and **S.**

Mark Island, the westernmost of this group, is about three-quarters of a mile to the westward of Colt Head; nearly a mile and a third to the westward of Beach Island; and five-eighths of a mile to the northwestward of Horse Head. It lies **N NE.** and **S SW.**, is between seven and eight hundred yards long and sixty feet high, and is thinly wooded near the shore, but bare on the summit. On the eastern and western sides it presents precipitous faces twenty feet high. A good channel, with deep water, (ten to fifteen fathoms,) here leads from East Penobscot Bay into the Middle Passage, leaving Beach Island and Horse Head on the north and Great Spruce and Little Spruce islands on the south. It is excellent and safe,—being entirely unobstructed. The main channel leaves Beach Island to the westward, passing between it and Hog Island on the eastern side of the channel.

Mark Island.

On passing between Bradbury and Butter islands and looking to the northwestward, Beach Island will be seen on the western side of the passage and Hog Island on the eastern side. The latter is easily recognized by the high, steep head on its southern end, with two or three clumps of trees dotting its surface. This head is about sixty feet high, and off its eastern end will be seen a rocky islet, with steep faces and bare of trees. This is **Fiddle Head** or **Fiddle Head Island**, and at low water is connected with Hog Island. When to the southwestward of the island, a single barn will be seen on its northern slopes and nearly in the middle; and the northwestern end is found to be low, flat and entirely bare of trees. This island is the southernmost of the group which lies on the eastern side of the channel off the entrance to Eggemoggin Reach. It is very irregular in shape, and about six hundred yards long in a **NW.** and **SE.** direction.

Hog Island.

On its northern side Hog Island is connected at low water with Pond Island, which is between five and six hundred yards to the northwestward of it. It is low and flat, except at its northwestern end, where it rises to a height of forty feet, with precipitous faces about ten feet high; and is crowned with a thick growth of low spruce. When viewed from the westward it appears only as a white, rocky head, with a growth of spruce on the southern face, a little to the southward of which will appear a single barn. Pond Island is nearly half a mile long in a **NW.** and **SE.** direction, and is dangerous of approach from the southward and westward on account of the **Black Ledges**, which lie seven hundred yards from its southern face. A small, bare, rocky knubble lies about one hundred and fifty yards to the northward of its northwestern end.

Pond Island.

On the western side of the channel, between five and six hundred yards to the northward of Beach Island, lie the Barred Islands, two rocky islets with a few fir trees upon them, and joined at low water. They lie **E.** and **W.** from each other, about one hundred yards apart. The easternmost is about one hundred and fifty yards long **N.** and **S.**, the other three hundred yards long **E.** and **W.** They mark the point of junction between the Middle Passage and East Penobscot Bay;—the passage between them and Western Island being a mile and three-eighths wide.

Barred Islands.

On the northern side of the channel, and about seven hundred and fifty yards to the westward of Pond Island, lies Western Island, a rocky islet, quite low on its eastern end, but rising to a steep hillock about twenty feet high at its northwestern end. It is partly wooded with the usual growth of spruce and fir, and has a house nearly midway between its eastern and western ends. A bare rock, about one hundred yards in diameter, lying about an eighth of a mile to the westward of it, is called **Green Ledge**.

Western Island.

The western entrance to Eggemoggin Reach is on the northern side of Western and Pond islands, between them and Cape Rosier, the southwestern extremity of Brooksville. Here the Middle Passage and the main channel of East Penobscot Bay unite and proceed in one wide channel to the mouth of Penobscot River. While the eastern shore is formed by the mainland of Brooksville and Castine, the western side is bounded by a large island, called Long Island, which, extending **N NE.** and **S SW.**, separates East from West Penobscot Bay. It is about ten miles long and very irregular in shape; and near the middle is almost separated into two islands by two coves, which penetrate its eastern and western shores, leaving only a narrow strip of land about one hundred yards wide between their heads. That portion of the island lying to the northward of this strip of land is called **North Islesboro'**, and that to the southward, **South Islesboro'**.

Long Island.

Off the southern end of Long Island, which is called Pendleton's Point, lie many small islands, bare rocks and ledges, extending to the southwestward, in about the same direction as the island, for nearly five miles. The Middle Passage into East Penobscot Bay passes between these islands and North Haven, while the channel up West Penobscot Bay passes to the westward of them.

Pendleton's Point.

There are many good anchorages on the shores of Long Island, but the best are those on its southern and western shores. Of those on the eastern side may be mentioned Bounty Cove, Sabbath-day Cove and Parker's Cove; while on its southern side is a most excellent anchorage, called **Gilkey's Harbor**; and on the western side, **Chow-Chow Cove, Seal Harbor** and **Turtle Head Cove**, all of which are excellent.

The eastern shore of Long Island is very irregular in outline,—being diversified with wooded and cleared lands of moderate height. The southern half of South Islesboro' is for the most part well wooded, while North Islesboro' shows high, cleared lands, well settled, and dotted here and there with groves of trees.

Bounty Cove, which separates North and South Islesboro', is four miles and three-quarters above the southern point of the island. It is of irregular shape, and affords anchorage in from four to eight fathoms;

Bounty Cove.

but its entrance is obstructed by two rocks, nearly awash, lying to the northward and eastward of its southern point of entrance, called **Hughes' Point**,—the outermost being about six hundred yards from the point. There is also a sunken ledge, with six feet, in the middle of the cove; and it is not recommended as an anchorage for strangers.

Sabbath-day Cove.

Sabbath-day Cove, or **Sabbath-day Harbor**, is about two miles to the northward of Bounty Cove and about six miles and three-quarters above Pendleton's Point. It is situated on the southeastern shore of North Islesboro', is somewhat irregular in shape, and only about three hundred and fifty yards in diameter at its mouth; but good anchorage in from one to three fathoms may be found in it, and it may be safely entered by simply keeping the western shore best aboard until fairly into the cove and then keeping the middle.

Parker's Cove.

Parker's Cove, just to the northward of this, though larger, is by no means so good an anchorage for strangers, as it affords little shelter from any but westerly winds. There are several ledges and bare rocks off its entrance, and strangers are advised not to enter it unless compelled so to do. The southern part of this cove is separated from the northern part, called **Coombs' Cove**, by a rocky islet, called **Hutchinson's Island**, twenty feet high, partly wooded and partly cleared, and having one or two houses on it; but the name Parker's Cove is generally given to both.

Turtle Head.

At the northern end of Long Island, East and West Penobscot bays unite, and here begins the Penobscot River. This northern end of Long Island is known as Turtle Head, and is rocky, of moderate height, its edges fringed with a thin growth of scrub and its summit crowned with a thick growth of spruce and fir. It is joined to the island by a sort of neck of low land. When off this head the city of **Belfast** will be plainly seen on the western shore of the bay, and the villages of **Searsport** and **Stockton** on the northern shore.

The eastern shore of East Penobscot Bay from Eggemoggin Reach to Castine Harbor is formed by the mainland of Brooksville. Cape Rosier, the southwestern extremity of this peninsula, is about a mile and a quarter to the northward of Western Island and nearly abreast of Bounty Cove. Seen from the southward it will show a high, bluff head, with white rocks on its surface here and there, and dotted with trees. It really has three heads,—the eastermost, called **Blake's Point**, having a bare summit and its slopes dotted with clumps of spruce and birch. The western head is the one seen coming up the bay. From this cape to the entrance to Castine the distance is a little over four miles. The shores are mostly high, steep, rocky and wooded. One mile to the northward of the western extremity of the cape is **Orr's Cove**, a small indentation with bold shores, but affording no shelter; and a mile and three-eighths to the northward of this is the southern entrance to Castine Harbor.

Cape Rosier.

Castine Harbor lies at the mouth of **Bagaduce River**, a very crooked stream, which takes its rise between Sedgwick and Brooksville, about three miles to the northward of Billings' Cove, (in Eggemoggin Reach,) flows to the northward and northwestward for about five miles, where it widens out into a broad bay, called **South Bay**, at the western end of which it turns to the southward past **North Castine**, and then to the southwestward, flowing into Penobscot Bay between Dice's Head on the north and the northern end of Cape Rosier on the south. Thus, in its course, the river describes three quarters of a circle. It may be mentioned that at South Bay it sends off a long arm to the northward, called **Northern Bay**, on the eastern shore of which is built the village of **Penobscot**.

Castine Harbor.

Dice's Head, the northern point of entrance to Castine Harbor, is easily recognized in coming up the bay by the white light-tower on its summit. It is about five miles above Cape Rosier and three miles to the eastward of Turtle Head, and forms the southeastern point of entrance to Penobscot River as well as the northern point of entrance to Bagaduce River. It is a steep and rocky bluff, wooded on the edges with a thick growth of fir and spruce, and quite bold-to,—the rocks rising almost perpendicularly. Dice's Head Light-house is an eight-sided stone tower, sheathed with wood and painted white. It is attached to the keeper's dwelling, which is of wood and painted brown. The tower is forty-two feet high, and shows a fixed white light, of the fourth order, from a height of one hundred and thirty feet above the sea, visible seventeen miles. Its geographical position is

Dice's Head and Light-house.

Latitude ..... **44° 22′ 57″ N.**
Longitude ..... **68° 49′ 9″ W.**

Coming abreast of Castine Harbor, two islands will be seen lying on the southern side of the passage into the harbor, near the Brooksville shore. The easternmost of these is called Holbrook's Island, and lies between Dice's Head and the northern point of Cape Rosier, and about a third of a mile from the latter. It extends **E.** and **W.**, is about three-quarters of a mile long, rocky, and at its western end shows a round, bare bluff, whence it descends to much lower land, covered with a thick growth of small trees. Next to the northward is **Nautilus Island**, also on the southern side of the main passage. It is low and rocky, with undulating surface of moderate height, dotted here and there with clumps of fir and with one or two houses on it. The passage to the southward of these islands, between them and the Brooksville shore, is not suitable for strangers,—being narrow and dangerous.

Holbrook's Island.

Seven-eighths of a mile to the northward of Dice's Head is **Block-house Point**, the southern point of entrance to a large cove, called **Wadsworth's Cove**, where anchorage may be had in from six to ten feet; but there is very little shelter. On the northern side of this cove is Perkins' Point, of moderate height, gently sloping, and bare of trees except on its northwestern slopes. The southern part of the point is cleared and has a group of houses upon it. Geographically this point, and not Dice's Head, is the eastern point of entrance to Penobscot River, and **Sears' or Brigadier Island** the western point. This island, with the high land of **Cape Gellison** to the eastward of it, will appear ahead as you come abreast of Castine entrance; and both will be described under Penobscot River.

Perkins' Point.

DANGERS

IN APPROACHING AND PASSING THROUGH EAST PENOBSCOT BAY FROM THE EASTWARD.

Vessels may either steer towards Matinicus Rock Light-houses or towards Seal Island until clear of the ledges to the southward of Isle au Haut. Of these ledges, many of which are dangerous, the first met with is known as Cold Ledge, which has seven feet at low water,

Cold Ledge. lies half a mile **SE.** by **S.** $\frac{5}{8}$ **S.** from The Black Horse, a mile and a quarter **SW.** by **S.** $\frac{1}{8}$ **S.** from Great Spoon Island, and is not buoyed. The sailing-lines, however, pass well to the southward of it, and it is not in the way unless you are standing to the northward on a wind. This ledge, as well as those south of Isle au Haut, is easily avoided by not approaching nearer to the Spoon Islands than a mile and a half, and giving Isle au Haut a berth to the northward of not less than two miles.

Next to the westward of Cold Ledge, and about a mile and a half from it, is Eastern Ear Ledge, which is bare at extreme low tides. From Eastern Ear it bears **S.** by **E.** $\frac{5}{8}$ **E.**, distant

Eastern Ear Ledge. half a mile, and is not buoyed; but the sailing-line passes well to the southward of it. Next to the westward, at a distance of about seven-eighths of a mile, is *Cape Ann Ledge*, with nine feet at low water, lying six hundred yards **SW.** by **S.** from Eastern Head, and not buoyed. It is the principal danger in the approaches to Head Harbor; but as no stranger has any business so close to Isle au Haut it is not buoyed.

The Roaring Bull. The Roaring Bull lies a mile and a quarter **SW.** $\frac{3}{4}$ **W.** from Eastern Head, the same distance **SE.** by **S.** from Western Head, is bare at three-quarters ebb, and marked by an iron spindle, painted red. It breaks heavily at all times, and although there is very deep water on all sides of it strangers should not attempt to pass to the northward of it, but should keep well outside.

Western Ear Ledge. Off Western Ear, and bearing from it about **S.** by **W.** $\frac{1}{4}$ **W.**, distant a little over six hundred yards, lies Western Ear Ledge, bare at half-tide at its northern end and having from seven to twelve feet at its southern end. It lies **N NE.** and **S SW.**, covering an area about a quarter of a mile long, and should have a spindle upon it for the convenience of vessels beating up towards Saddle-back Ledge.

Three Fathom Ledge. The passage between Isle au Haut and Seal Island is over seven miles wide and almost entirely unobstructed; but, in standing over towards Seal Island, you must look out for Three Fathom Ledge, a shoal with twenty-one feet at mean low water, lying nearly a mile and a half **E.** by **N.** $\frac{1}{2}$ **N.** from the island and six miles and a half **S.** $\frac{1}{2}$ **W.** from Saddle-back Ledge Light-house. To avoid it vessels should not stand farther to the westward than to bring that light-house to bear **N.** $\frac{1}{4}$ **W.**

The Snippershan. It may also be remarked that, in the wide passage between Brimstone and Otter islands on the north and Seal Island on the south, there is a rocky shoal, with six fathoms, known as The Snippershan. It breaks in heavy weather from the southward.

In standing up between Isle au Haut and Saddle-back Ledge, it is safest to give the island a wide berth to the eastward,—say about a mile and three-eighths,—as there are many bare

The Brandies. rocks and sunken ledges scattered along its western face, none of which are buoyed. The outermost of these is a group of three called The Brandies,—the westernmost of which is a mile and a quarter to the westward of Duck Harbor entrance and nearly two miles to the eastward of Saddle-back Ledge Light-house. They are not buoyed, and are very dangerous when covered.

Do not approach Moore's Head nearer than one-third of a mile, as there is *a reef, nearly four hundred yards long*, extending out from it in a southwesterly direction. So, in approaching Kimball's Head, give it a good berth (not less than a mile) to avoid **Kimball's Rock** and Marsh

Marsh Cove Ledges. Cove Ledges. The former, which is a bare rock surrounded by deep water, lies five-eighths of a mile **W.** from Kimball's Head; while the latter extend off from Marsh Cove Head in an easterly direction nearly half a mile. The innermost ledge is a bare, rocky islet, surrounded by shoal water; but the others are bare at low water. These ledges are not buoyed, and strangers must be careful, when in their vicinity, not to go to the eastward of Eagle Island Light-house bearing **N.** $\frac{1}{8}$ **W.**, in order to avoid them.

Saddle-back Ledge Shoal. The channel between Saddle-back Ledge and Eagle Island is clear; but vessels, in beating, must beware of the numerous ledges lying off the Fox Islands shore. Of these the first met with after passing Saddle-back Ledge is called Saddle-back Ledge Shoal. It has four feet at mean low water, and is marked by a spar-buoy, painted red and black in horizontal stripes, and placed in five fathoms close to the southern side of the shoal. This buoy is about three-quarters of a mile **NW.** by **N.** $\frac{3}{4}$ **N.** from Saddle-back Ledge Light-house, and from it Eagle Island Light-house bears **N.** $\frac{1}{4}$ **E.**

Diamond Rock Ledge. About a mile to the westward of this buoy lies **Diamond Rock**, already described on page 194; and, nine hundred yards to the northward of it, Diamond Rock Ledge, with two feet at mean low water, and marked by a black spar-buoy (No. 1) placed on

its northwestern end. The passage to the westward of this, leading up towards Carver's Harbor and Hurricane Sound, is so full of rocks that no intelligible description can be given of them in this place. They will be found described in detail under the head of approaches to Carver's Harbor from the eastward. *Dangers -- East Penobscot Bay.*

When to the northward of Diamond Rock Ledge it would be well not to approach the Vinal Haven shore too closely, in order to avoid the many ledges that lie off that shore. A good rule is not to stand to the westward of Eagle Island Light-house bearing **N.** ¾ **E.** until you have passed Smith's Island. Of these ledges, Middle Ledge, dry at half-tide, lies four hundred yards to the southeastward of Carver's Island, between it and Hay Island; *Middle Ledge.* *Sheep Island Ledge*, dry at low tides, lies three-eighths of a mile to the eastward of Carver's Island and the same distance south of Sheep Island; *Crosby's Ledge*, also bare, lies three hundred yards to the eastward of Sheep Island; *Halibut Ledge*, also bare, lies three-quarters of a mile to the eastward of Sheep Island; *Green Ledge*, a bare, rocky islet surrounded by shoals, lies a quarter of a mile inshore of Halibut Ledge, and nine hundred yards **E.** from the northern end of Sheep Island; *Griffin's Ledge*, bare at one-quarter ebb, lies four hundred yards **E.** from Green Ledge; House Ledge, a rocky islet half a mile off the shore of Arey's Neck, lies three-eighths of a mile to the northeastward of Griffin's Ledge; *Point Ledge*, bare at one-quarter ebb, lies close in with the Vinal Haven shore, and three hundred yards north of House Ledge; and, finally, *The Triangles*, the easternmost of the ledges on the western side of the bay, to the northward of Saddle-back Ledge, and known, respectively, as *Great* and *Little Triangle* ledges. The former, which is the easternmost, is always out, but is surrounded by shoal water; while the latter is a sunken ledge with three feet at mean low water. Great Triangle Ledge lies nine hundred yards **E.** by **S.** from House Ledge, and two miles and an eighth to the northward of Diamond Rock. Little Triangle Ledge lies three hundred and fifty yards **N NW.** from the Great Triangle, and five-eighths of a mile from the Vinal Haven shore. The rule, above given, not to stand to the westward of Eagle Island Light-house bearing **N.** ¾ **E.**, clears all of these ledges. *House Ledge.*

On the eastern side of the bay, after passing to the northward of Kimball's Head, vessels will not meet with any dangers (except those which are always out) until they approach Outer Scrag Ledge, a dangerous half-tide ledge, lying nearly seven-eighths of a mile **W.** by **S.** ¼ **S.** from Sparrow Island, and close to the eastern edge of the channel. From this ledge Mark Island Light-house (at the western entrance to Deer Island Thoroughfare) bears **NE.** by **N.** ⅜ **N.**, distant a mile and a half, and Eagle Island Light-house **N.** ½ **W.**, distant six miles and three-quarters. Seven-eighths of a mile **NW.** by **N.** ⅛ **N.** from this ledge, and three-quarters of a mile **W.** ⅛ **S.** from Scraggy Island, lies *Scraggy Island Ledge*, also bare; and from this ledge Eagle Island Light-house bears **N.** ⅜ **W.**, distant nearly six miles. *Outer Scrag Ledge.*

After passing to the northward of Smith's Island, give the Vinal Haven shore a berth of three-quarters of a mile to avoid the numerous bare rocks and sunken ledges lying off that coast; and above this no dangers are met with until you have passed Eagle Island. It may be remarked, however, that the Deer Isle shore should receive a berth, as there are several dangerous rocks close in with it, notable among which is Sellers' Rock, always out, and lying about eight hundred yards from shore, nearly half a mile above Bear Island, and seven-eighths of a mile to the southward of the entrance to Southwest Harbor. By not shutting in Denning's Point behind the northwestern end of Sheep Head Island you will avoid the dangers on this shore. *Sellers' Rock.*

Of the rocks off the Vinal Haven shore may be mentioned, first, Brown's Ledges, lying **NW.** and **SE.** from each other, to the northward of Brown's Island, extending six hundred yards from the island, and nearly all bare at low water; *Benny's Ledge*, four hundred yards to the southward of Bluff Head, and two hundred yards from shore, which is also bare; and *a ledge, bare at half-tide*, lying four hundred yards to the northward of Hen Island and an eighth of a mile from the southeastern point of Calderwood's Neck. There are also a number of ledges, known as *Babbidge's Island Ledges*, lying off the southern shore of Babbidge's Island at distances varying from one hundred to six hundred yards. They are nearly all bare at low water; some of them always out and some of them bare at half-tide; but they are easily avoided by giving the island a berth to the westward of half a mile. *Brown's Ledges.*

On the eastern side of the bay, on approaching Mark Island Light-house, a black spar-buoy will be seen to the northwestward of the light-house. This is on Mark Island Ledge, already described, under Deer Island Thoroughfare, as lying a quarter of a mile **NW.** by **W.** ½ **W.** from the light-house. It has four feet at low water, and extends **NE.** and **SW.**; and the buoy, which is marked No. 1, is placed in five fathoms on its northern end. The courses pass well to the westward of it, and it is only dangerous to vessels standing to the eastward on a wind, or to those bound through Deer Island Thoroughfare. *Mark Island Ledge.*

On approaching Southwest Harbor care should be taken not to shut in Denning's Point behind the northwestern end of Sheep Head Island, as there are bare ledges extending in a **S.** ½ **W.** direction from Sheep Head Island for six hundred yards. They are called Sheep Head Island Ledges, and are not buoyed. There are also a number of shoals off **Emerson's Pond** and **Sylvester's Cove**, (on the northern side of Sheep Head Island,) *Sheep Head Island Ledges.*

some of which are bare at half-tide and others always out. They are, however, easily avoided by not standing to the eastward of the range of Denning's Point with the western extremity of Sheep Head Island.

Denning's Point Ledge. Denning's Point should also receive a berth to the eastward of not less than a quarter of a mile to avoid Denning's Point Ledge, bare at half-tide, and having shoal water extending from it to the northwestward for about three hundred and fifty yards from the point. This ledge makes off from the northern side of the point, whose western extremity is very bold-to,—ten fathoms being found within seventy-five yards of the shore.

On the western side of the channel, on approaching Eagle Island Light-house, beware of *a sixteen feet shoal* lying a little over five-eighths of a mile due **S.** from the light-house and eight hundred yards **NE.** by **E.** from the southern Porcupine. The range for this ledge, which is not buoyed, is the southern Porcupine, Bald Island and Sheep Island exactly in one, with Eagle Island Light-house bearing **N.** A buoy will be recommended on this ledge.

Exactly in the middle of the passage between Eagle and Bradbury islands, and three-eighths of a mile **NW.** $\frac{1}{2}$ **N.** from Hardhead Island, lies a dangerous ten feet rock, about seventy-

Middle Rock. five yards in diameter, called Middle Rock. It is not buoyed, but should be, as it is directly in the way of vessels using this passage. The sailing-line, however, passes to the westward of it, leading about midway between Beach and Western islands. Middle Rock bears **S.** by **W.** $\frac{1}{4}$ **W.** from the western end of Bradbury Island, distant three-quarters of a mile.

When past Middle Rock there are no dangers until you come up with Western

Green Ledge. Island, three hundred and fifty yards to the westward of which lies Green Ledge, already described on page 200. It is always bare, and is easily avoided by not going to the eastward of the western extremity of Cape Rosier bearing **N NE.**

The passage between Cape Rosier and Long Island is entirely clear until you approach the entrance to Castine Harbor, when you must look out, on the Islesboro' shore, for a very dangerous detached ledge, called Long Island Ledge, lying off the mouth of Parker's Cove, with six feet at low water. It is marked by a black spar-buoy (No. 3) placed in five fathoms just to the eastward of the ledge,—the eastern extremity of **Coombs' Neck** bearing **N.** $\frac{3}{8}$ **E.**, distant nearly a mile, and **Decker's Point** (the southern point of entrance to Parker's Cove) **W.** by **S.** $\frac{1}{8}$ **S.**, distant nearly

Long Island Ledge. three-quarters of a mile. You may pass to the westward of this shoal, in not less than five fathoms, by giving the buoy a berth to the eastward of three hundred yards; but it is best not to attempt it on account of the numerous ledges and rocks lying in the mouth of Parker's Cove. Of these, a group of three, always bare, lies about midway between Coombs' Neck and the small island, called **Hutchinson's Island,** (separating Parker's from Coombs' Cove,) and extends to the eastward three-quarters of a mile from the shore of the former cove;—the easternmost rock lying six hundred yards **N.** $\frac{3}{8}$ **W.** from the black buoy on Long Island Ledge, and about thirteen hundred yards **S.** by **W.** from the eastern extremity of Coombs' Neck. Midway between this eastern rock and Coombs' Neck, and bearing from the black buoy on Long Island Ledge **N.** $\frac{3}{8}$ **E.**, distant eleven hundred yards, lies *another detached rock, with ten feet at low water,* and not buoyed. It may easily be avoided, however, in stretching to the westward, by not going beyond the eastern extremity of Coombs' Neck bearing **N.**

Beyond this there are no dangers until you reach Fort Point Ledge, in Penobscot River.

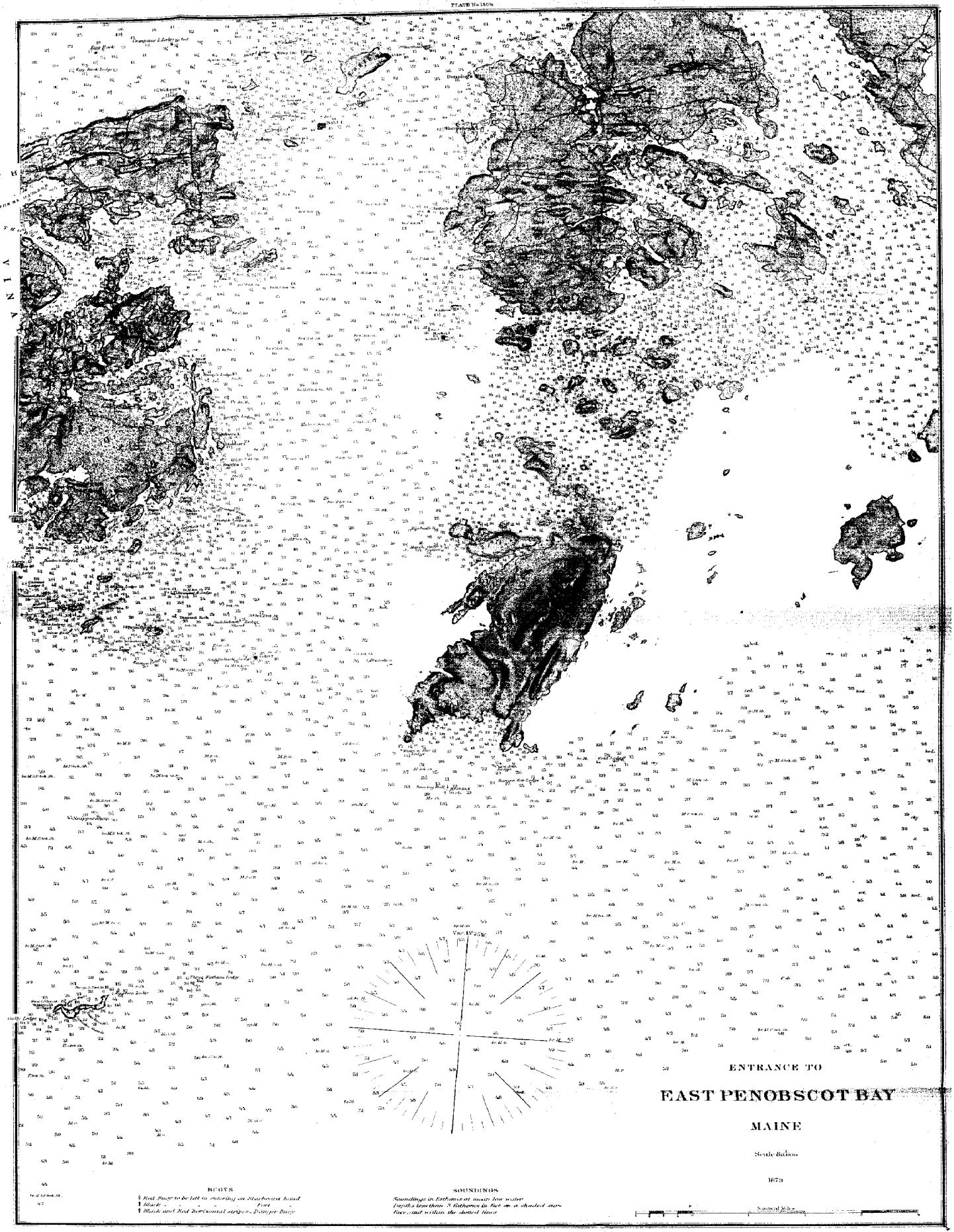
SAILING DIRECTIONS

FOR APPROACHING AND PASSING THROUGH EAST PENOBSCOT BAY FROM THE EASTWARD.

Approaching from the Eastward, if you have come inshore of Mount Desert Rock, pass about four miles to the southward of Long Island (at the entrance to Blue Hill Bay) and steer **W.** by **S.** $\frac{1}{2}$ **S.**, which course will lead directly for Matinicus Rock Light-houses. On this course, when Saddle-back Ledge Light-house bears **NW.** by **N.**, steer for it until Eagle Island Light-house bears **N.** and you are within two miles and three-eighths of Saddle-Back Ledge Light-house, with the summit of Western Ear bearing **NE.** by **E.** $\frac{1}{8}$ **E.**, distant about a mile and a half. You will now have forty-four fathoms, "mud, pebbles and shells," and must steer **N.** for Eagle Island Light-house, which will soon become visible. On this course continue, carrying not less than fifteen fathoms, until within two miles of the light, and the western end of Hardhead Island is brought to bear **N.** by **E.** $\frac{1}{4}$ **E.**, in range with Bradbury Island; when, in order to avoid the sixteen feet shoal off Eagle Island, steer for Hardhead Island, continuing the course for a mile and three-quarters until within five-eighths of a mile of it, with Eagle Island Light-house bearing **NW.** $\frac{1}{8}$ **W.**, distant five-eighths of a mile. Here there will be fifteen fathoms, and **NW.** by **N.** $\frac{1}{8}$ **N.** will lead safely through between Bradbury and Butter islands and up to Green Ledge. When the northern point of Western Island bears **E.** $\frac{1}{8}$ **N.**, distant three-quarters of a mile, the western extremity of Cape Rosier **NE.** by

PROOF FROM UNFINISHED PLATE

PLATE No 1805



ENTRANCE TO

EAST PENOBSCOT BAY

MAINE

Scale Reduced

1879

BUOYS

Red Buoys to be left in entering on Starboard hand
Black - - - Port
Black and Red Horizontal stripes, Danger Buoy

SOUNDINGS

Soundings in Fathoms at mean low water
Depths less than 3 Fathoms in flat tint, & shoaled over
lines and within the dotted lines

Statute Miles

N. ⅜ N., distant a little over a mile and five-eighths, and Mark Island (in the Middle Passage) SW. ⅜ S., distant nearly two miles, steer N. by E. ¼ E., which course will lead, with not less than eight fathoms, to the mouth of Penobscot River. On this course, when you have passed Perkins' Point and Fort Point Light-house bears NE. ⅞ N., steer NE. ¾ N. towards Whitmore's Island, passing between Fort Point and the stone beacon on Fort Point Ledge. When up with Fort Point follow the directions for the river.

Sailing Directions---East Penobscot Bay.

The above courses pass four miles to the eastward of Three Fathom Ledge; a mile and five-eighths to the westward of The Roaring Bull; a mile and a half to the westward of Western Ear Ledge; a mile and three-eighths to the eastward of Saddle-back Ledge Light-house; over half a mile to the westward of The Brandies; a mile and five-eighths to the eastward of Saddle-back Ledge Shoal; a mile and three-quarters to the westward of Marsh Cove Ledges; two miles and three-eighths to the eastward of Great Triangle Ledge; one mile and three-eighths to the westward of Scraggy Island Ledge; the same distance to the westward of Halibut Ledge; half a mile to the westward of Outer Scrag Ledge; one mile and an eighth to the westward of the black buoy on Mark Island Ledge; a mile to the westward of Sellers' Rock; a mile and three-eighths to the westward of Sheep Head Island Ledges; six hundred yards to the eastward of the sixteen feet shoal off Eagle Island; a quarter of a mile to the eastward of Eagle Island Light-house; seven hundred yards to the westward of Hardhead Island; a quarter of a mile to the westward of Middle Rock; three-eighths of a mile to the westward of Green Ledge; three-quarters of a mile to the eastward of the black buoy on Long Island Ledge; seven-eighths of a mile to the eastward of **Coombs' Point**, (the eastern extremity of Coombs' Neck;) the same distance to the westward of Dice's Head; nearly a mile and three-quarters to the eastward of Turtle Head; and three-quarters of a mile to the westward of Perkins' Point.

Or, if you have come along shore, or from Blue Hill Bay, you may, when to the westward of Long Island, bring the middle of it to bear NE. by E. ¼ E. and steer SW. by W. ¼ W., which course will pass three miles to the southward of Marshall's Island, two miles to the southward of Great Spoon Island, and leads directly towards Seal Island. On this course, when Saddle-back Ledge Light-house bears NW. by N. steer for it, and follow the directions previously given.

The above courses pass a mile and a half to the southward of Eastern Ear Ledge; two miles to the southward of Cape Ann Ledge; and a mile and five-eighths to the southward, and the same distance to the westward, of The Roaring Bull.

Or, you may bring Mount Desert Rock Light-house to bear E. ½ S. and steer W. ½ N., which will lead directly towards Seal Island. On this course, when Saddle-back Ledge Light-house bears NW. by N. steer for it, and follow the directions previously given.

On the above courses, to enter Carver's Harbor by the passage between Carver's and Hay islands through the thoroughfare to the southward of Vinal Haven Island.—On the N. course for Eagle Island Light-house, when Saddle-back Ledge Light-house is abeam, steer NW. ⅜ W. for a mile and five-eighths, until the light-house bears S. ½ W. and the middle of Brimstone Island W. by S. ⅝ S.,—the latter being distant two miles and seen just to the southward of Diamond Rock. Here you will have about twenty-three fathoms, and a W. course will lead, with not less than nine fathoms, between Diamond Rock and Diamond Rock Ledge, and nearly for the northernmost of the Hay Islands. When within nearly half a mile of this island, in twenty-three fathoms, with the middle of Brimstone Island bearing S. by E. ⅛ E., distant half a mile, and the middle of Carver's Island W NW., distant seven-eighths of a mile, a W. ¾ N. course will lead safely into the thoroughfare between Middle Ledge and the Hay Islands, carrying not less than seven fathoms. When abreast of the western end of Carver's Island, steer NW. by W. and follow the directions for the thoroughfare.

On the above courses, to enter Isle au Haut Thoroughfare.—On the N. course for Eagle Island Light-house, bring Saddle-back Ledge Light-house to bear SW. by W. ⅜ W. and steer NE. by E. ⅜ E., which course will lead up to the entrance to the Thoroughfare; after which follow the directions for entering the harbor.

On the above courses, to enter Fox Islands Thoroughfare.—On the N. course for Eagle Island Light-house, when just past Kimball's Island, having the summit of Kimball's Head bearing E. by S. ¼ S., Mark Island Light-house NE. by N. ⅛ N., (in range with Scraggy Island,) and the southern extremity of Merchant's Island E. ⅜ N., steer NW. by N., which course will lead, with not less than ten fathoms, to the entrance to the Thoroughfare; after which follow the directions for the passage.

Sailing Directions---East Penobscot Bay.

On the above courses, to enter Crockett's Cove.—On the **N.** course for Eagle Island Light-house, when Mark Island Light-house bears **E.** by **S.** $\frac{3}{8}$ **S.**, distant nearly a mile and a half, steer **NE.**, which will lead directly into the cove.

To enter Southwest Harbor.—On the **N.** course for Eagle Island Light-house, when Bear Island bears **E.** by **S.**, the western end of Bald Island **NW.** by **N.** $\frac{1}{8}$ **N.**, and Mark Island Light-house **SE.** by **S.** $\frac{1}{8}$ **S.**, Southwest Harbor will be fairly open, and **NE.** $\frac{3}{8}$ **E.** will lead safely in, passing to the southward of Sheep Head Island Ledge.

To enter Northwest Harbor.—On the **N.** by **E.** $\frac{1}{4}$ **E.** course for Hardhead Island, when within five-eighths of a mile of it and the same distance from Eagle Island Light-house,—the latter bearing **NW.** $\frac{1}{8}$ **W.**,—steer **NE.** $\frac{7}{8}$ **E.**, heading exactly for the southern end of Carney's Island, (between Little Deer Island and the northeastern point of Deer Isle.) On this course the southernmost of The Porcupines, the northwestern end of Bald Island, and the western end of Sheep Island will be in range. Continue it until nearly up with **Gull Ledge**, and **Heart Island** (on the eastern side of the entrance) bears **E.** $\frac{1}{2}$ **N.**, distant one mile, when steer **E.** $\frac{3}{8}$ **S.**, carrying not less than four fathoms, until you are exactly between the island and the ledge and the harbor is fully open. Now steer **SE.** by **S.**, which course will lead safely into the harbor.

On the above courses, to enter Sabbath-day Cove.—Continue on the **NW.** by **N.** $\frac{7}{8}$ **N.** course from between Hardhead and Eagle islands until off the entrance to the cove; after which keep the middle of the passage to the anchorage.

To enter Castine Harbor.—On the **N.** by **E.** $\frac{1}{4}$ **E.** course from off Western Island towards Cape Gellison, when Dice's Head Light-house bears **NE.** by **E.** $\frac{3}{8}$ **E.**, distant a little over a mile and an eighth, and Turtle Head **NW.** $\frac{3}{4}$ **N.**, distant two miles and a quarter, steer **E.** $\frac{1}{8}$ **N.**, between Dice's Head and Nautilus Island, and follow the directions for the harbor.

To pass to the northward of Long Island and enter Belfast Bay.—Bring Dice's Head Light-house to bear **SE.** by **E.**, and steer **NW.** by **W.** until you come abreast of Turtle Head, (which you must pass a quarter of a mile distant,) and when it is abeam steer **NW.** by **W.** $\frac{1}{2}$ **W.**, which will bring you up with the beacon on Steele's Ledge; after which you must follow the directions for the harbor.

To enter Searsport Harbor.—When abreast of Turtle Head, on the **NW.** by **W.** course for Belfast Bay, as before,—the head bearing **SW.** by **S.** and the highest part of Sears' Island **N.** by **E.** $\frac{1}{4}$ **E.**,—steer **N.** by **W.** $\frac{1}{8}$ **W.**, (with the village of Searsport directly ahead,) which course will lead safely into the harbor.

To enter Stockton Harbor.—On the course **N.** by **E.** $\frac{1}{4}$ **E.** towards Cape Gellison, when you are off Castine Entrance, with Dice's Head Light-house bearing **NE.** by **E.** $\frac{3}{8}$ **E.** and Turtle Head **NW.** $\frac{3}{4}$ **N.**, steer **N.**, which will lead midway between Cape Gellison and Sears' Island into the harbor.

HARBORS IN EAST PENOBSCOT BAY.

Although there are very many anchorages and small harbors on both shores of this bay, they are, with few exceptions, difficult of access and unfit for strangers, and merit no further description than has already been given them. Isle au Haut Thoroughfare, however, at the entrance to the bay, Fox Islands Thoroughfare, (between North Haven and Vinal Haven,) and Castine Harbor, at the head of the bay, are much resorted to, and will receive a detailed description.

ISLE AU HAUT THOROUGHFARE

is contained between the northern shore of Isle au Haut and a large island, called Kimball's Island, lying close in with it, forming the northern shore of the harbor. Though called a Thoroughfare, there is really no passage through,—a bar, dry at low water, extending across the northeastern end of the reach.

Kimball's Island, already described on page 193, lies nearly **E.** and **W.**, and is a mile and five-eighths long. At the point nearest to Isle au Haut it is only one hundred yards off, which is here the narrowest part of the Thoroughfare. It is one hundred and sixty feet high in the middle, sloping gradually towards the eastern and western ends, and again at the western end rising to a steep, bluff head, one hundred feet high, known as **Kimball's Head.** With the exception of this head, which is thickly wooded, the island is a mere bare rock, dotted with clumps of stunted spruce standing on the summit and clinging to its sides. On the southern side of this head makes in **Marsh Cove,** which is not safe on account of the dangerous **Marsh Cove Ledges,** extending off in an easterly direction nearly half a mile from **Marsh Cove Head,** on its southern side. This head is about sixty feet high, and forms the northern point of entrance to Isle au Haut Thoroughfare.

Kimball's Island.

Between Moore's Head (see page 193) and Trial Point, the southern limit of the approach, is a narrow and shallow cove, called **The Seal Trap.** Trial Point is low, flat, bare and rocky at its extremity; but rises to a thickly wooded summit, sixty feet high, about a quarter of a mile back from the water. The shore from this to Robinson's Point, about a mile to the northeastward, presents precipitous faces about twenty feet high, and is for the most part densely wooded and undulating in outline,—the heights varying from forty to one hundred and sixty feet. A prominent feature of this part of the shore is **Bald Mountain,** one hundred and sixty feet high, steep, rocky, almost entirely bare, and having its western slopes covered with outcropping bare ledges. Its summit is five-eighths of a mile above Trial Point. **Trial Point.**

On the southeastern side of the entrance, which is here a quarter of a mile wide, and about one mile above Trial Point, is Robinson's Point, of moderate height, rocky and thickly wooded. The shores above the point are undulating, with one or two cleared fields, but for the most part rocky and barren. **Robinson's Point.**

On the northern shore, immediately opposite to the lower end of the village, is **Money Point,** gently sloping, forty feet high, and with tall trees upon it. The settlement is upon the southern side of the Thoroughfare, at its eastern end, and has a very conspicuous white church with a tall steeple. A bar, bare at low water, extends from the eastern end of Kimball's Island to the Isle au Haut shore, thus effectually closing the passage at low water and affording a natural breakwater in easterly winds.

DANGERS

IN APPROACHING AND ENTERING ISLE AU HAUT THOROUGHFARE.

I. ***From the Southward through East Penobscot Bay.***—In approaching this harbor from East Penobscot Bay the first danger met with is not in the way of vessels unless they are standing to the southward on a wind. In such case The Brandies are met with first, consisting of a group of three bare rocks, the westernmost of which is a mile and a quarter to the westward of Duck Harbor entrance and nearly a mile and three-quarters to the southward of Moore's Head. They are not buoyed and are very dangerous when covered. Nearly seven-eighths of a mile to the eastward of these lies **Duck Harbor Ledge,** bare at low water, and lying nearly half a mile **NW.** by **W.** from the entrance to Duck Harbor. Between five and six hundred yards **N.** ¾ **W.** from this ledge is *another detached ledge, out at half-tide,* but having no name. It bears from Trial Point **SW.** ¼ **W.,** distant three-quarters of a mile; and it, as well as The Brandies and Duck Harbor Ledge, is easily avoided by not standing to the southward of Saddle-back Ledge Light-house bearing **W.** by **S.** ¾ **S.** When past this ledge and approaching Trial Point, give the point a berth of not less than one-third of a mile, as there is *a reef, bare at low water,* extending nearly four hundred yards from it in a southwesterly direction. ***The Brandies.***

When past Trial Point the next danger met with is Sawyer's Ledge, which lies off the northern shore, has seven feet at low water, and is about a quarter of a mile to the northwestward of Robinson's Point. A black spar-buoy, marked No. 1, is placed on its southeastern end in two and a half fathoms, and is to be left to the northward. ***Sawyer's Ledge.***

When abreast of buoy No. 1 a black spindle will be seen to the northeastward. This is on Inner Ledge, which lies about one hundred and fifty yards off the Kimball's Island shore and is out at low water. The spindle is on the rock, and must receive a berth of about fifty yards to the northwestward. The channel is narrow, but affords beating-room for a smart-working vessel, and the anchorage is excellent,—the depth ranging from twelve feet to five fathoms. ***Inner Ledge.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING ISLE AU HAUT THOROUGHFARE.

I. ***From the Southward, through East Penobscot Bay.***—On the **N.** course through East Penobscot Bay for Eagle Island Light-house, bring Saddle-back Ledge Light-house to bear **SW.** by **W.** ¾ **W.** and steer **NE.** by **E.** ¾ **E.,** which will lead safely into the entrance. Keep the southeastern shore best aboard; and the black spar-buoy on Sawyer's Ledge will soon be seen a little to the northwestward. Steer for this buoy, aiming to pass to the southeastward of it; and when past it continue along the southeastern shore, when the black spindle on Inner Ledge will be seen, which you must also pass to the southward of; and when abreast of it, **NE.** by **E.** leads safely to the head of the harbor.

Anchorage may be found anywhere in the channel after passing Inner Ledge. Not less than three fathoms at low water may be taken into the harbor.

DANGERS

IN APPROACHING AND ENTERING ISLE AU HAUT THOROUGHFARE.

II. ***Coming from the Northward, through East Penobscot Bay.***—On approaching Kimball's Island from the northward, look out first for Kimball's Rock, a bare rock, surrounded by deep water, lying about two-thirds of a mile **W.** from Kimball's Head. There is a ***Kimball's Rock.***

Marsh Cove Ledges. passage inshore of it, but strangers are advised to keep to the westward. When past it, the dangerous Marsh Cove Ledges are met with, extending off from Marsh Cove Head in an easterly direction about half a mile. The innermost ledge is a bare, rocky islet surrounded by shoal water; but the others, with the exception of the outer rock, are bare at low water,—the latter having three feet at lowest tide. They are not buoyed, and strangers must be careful not to approach Marsh Cove Head nearer than a mile until the highest part of it bears to the northward of E. by N. When past these ledges the black buoy on Sawyer's Ledge will be seen, (to the southward of which the course passes,) and the entrance to the harbor is clear. See description of Inner Ledge and Sawyer's Ledge given on the preceding page.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING ISLE AU HAUT THOROUGHFARE.

II. ***From the Northward, through East Penobscot Bay.***—The course from the northward through the bay is S. from Eagle Island Light-house. On this course, when the highest part of Kimball's Head bears E. by S. $\frac{3}{4}$ S., distant two miles, the southern end of Merchant's Island E. $\frac{5}{8}$ N., distant three miles and five-eighths, and Mark Island Light-house NE. by N. $\frac{7}{8}$ N., distant nearly three miles and a half, steer SE., heading about midway between Trial Point and Bald Mountain. Continue this course for about a mile and three-eighths, or until you come abreast of Kimball's Rock, (which should bear NE., distant seven hundred yards,) when steer E. by S. $\frac{5}{8}$ S. for Robinson's Point until within two hundred yards of it. Now steer NE. by E. $\frac{5}{8}$ E., as before, keeping the southern shore best aboard, and follow the directions previously given.

The above courses pass seven hundred yards to the westward, and six hundred yards to the southward, of Kimball's Rock; three hundred yards to the southward of the westernmost of the Marsh Cove Ledges; and about two hundred yards to the southward of Sawyer's Ledge.

TIDES.

Corrected Establishment	**10h 51m**
Mean Rise and Fall of tides	**8.8 ft.**
Mean duration of Rise	**6h 14m**
Mean duration of Fall	**6h 11m**
Rise of highest tide observed	**10.1 ft.**

FOX ISLANDS THOROUGHFARE

is one of the most important of the inshore passages, used by coasters bound to the eastward or westward, between Passamaquoddy Bay and Cape Elizabeth. In connection with Moose-a-bec Reach, Mount Desert Eastern Passage, Cranberry Island Passage and Deer Island Thoroughfare or Eggemoggin Reach, it forms an almost uninterrupted inshore passage, with comparatively smooth water, and a depth of not less than fifteen feet at low water, from Englishman's Bay to West Penobscot Bay. Its eastern entrance bears from the western end of Deer Island Thoroughfare about W. $\frac{1}{4}$ N., distant nearly four miles, and is somewhat difficult of recognition in the absence of any distinguishing marks, as the passage is apparently closed by the overlapping points of land to the westward.

Calderwood's Neck. The eastern entrance to Fox Islands Thoroughfare, which is a mile and three-eighths wide, is contained between Babbidge's Island on the north and the northeastern point of Vinal Haven on the south. The latter, known as Calderwood's Neck, is undulating, (varying in height from sixty to one hundred and sixty feet,) and is diversified with woods and cultivated fields dotted here and there with houses. When seen from the eastward it shows as a high hill, bare except on its summit, which is flat and has a group of tall trees upon it standing in a line apart from each other.

Babbidge's Island. Babbidge's Island, on the northern side of the entrance, lies NE. and SW. and is about five-eighths of a mile long. It is barren, rocky, of moderate height, varying from ten to sixty feet, and undulating. It is for the most part bare of trees; but at its eastern end there is a thick grove of scrubby fir and spruce, and an occasional growth of scrub along its southern face. It is surrounded by ledges, and is not safe to approach on its southern side nearer than three-eighths of a mile. The eastern and northern shores of Calderwood's Neck, on the contrary, are bold-to,—from four to seven fathoms being found within two hundred yards of the rocks.

Calderwood's Island. Calderwood's Island lies next to the westward of Babbidge's Island, from which it is separated by a shallow passage a quarter of a mile wide and full of ledges. It is about five-eighths of a mile long E NE. and W SW.; and, seen from the southward and westward, appears of moderate height, nearly bare of trees, with a high, rocky head near the middle on its southern side, which has a single tall spruce tree upon it, forming a somewhat remarkable feature, as there are no other trees near it.

There is a passage, with eight feet at low water, between Calderwood's Island and Stimpson's Island, which leads into Little Thoroughfare, before mentioned, contained between North Haven and Burnt Island on the north and Calderwood's and Stimpson's islands on the south. This passage must not be attempted without a pilot.



Entrance to Fox Islands Thoroughfare from East Penobscot Bay. Widows Id. bearing W. by N, and Mark Id. Lt. Ho. E. by S, distant 2 Miles.



Entrance to Fox Islands Thoroughfare from West Penobscot Bay, the Lt. Ho. bearing E. by N. ½ N, distant 5¼ Miles.

Stimpson's Island lies nearly **E.** and **W.**, and is also on the northern side of the passage. It is about one mile long, and for the most part composed of rugged bare rocks. At its western end it terminates in a high, rocky head, covered with a very thick growth of small birch and spruce. This head cannot be mistaken, as the grove upon it is the only thick growth on this side of the entrance. **Stimpson's Island.**

Off the southern shore of Stimpson's Island there will be seen, on coming abreast of the southwestern end of Babbidge's Island, a high, bare rock about seven-eighths of a mile off, and nearly in the middle of the passage. This is Channel Rock. It lies about eight hundred yards from the southern shore of Stimpson's Island and nearly three-quarters of a mile from the Vinal Haven shore, and has good water on all sides, (from seven to nine fathoms.) It may be passed on either hand close-to, as it is quite bold. It is usual, however, to pass to the southward of it. **Channel Rock**

When up with Channel Rock, a small island will be seen in the middle of the passage and about seven-eighths of a mile to the westward. This is Widows' Island, and will appear grassy, entirely bare of trees, and of moderate height. It lies **E NE.** and **W SW.**, is nearly four hundred yards long, and is exactly equidistant from Stimpson's Island and Calderwood's Point—the latter on the Vinal Haven shore. There is deep water on both sides of it, but it is usual to pass between it and Stimpson's Island, or to the northeastward of it. Widows' Island lies **N.** from **Carver's Cove**, which makes into the northern shore of Vinal Haven. This cove is perfectly unobstructed, affords excellent anchorage in from ten to sixteen feet, soft bottom,—the waters shoaling gradually,—and it is only necessary to stand boldly in and use the lead. **Widows' Island**

The western shore of Carver's Cove is formed by Calderwood's Point, extending from the northern side of Calderwood's Neck in a northerly direction about seven-eighths of a mile. It is of moderate height, mostly cleared, with clumps of trees scattered over its surface, and is tolerably bold-to. About one hundred yards to the eastward of its northern end lies **Birch Island**, a low, rocky islet, with a few trees on its southern end, and connected at low water with the point. **Calderwood's Point.**

On the northern shore of the Thoroughfare, when past the western end of Stimpson's Island, there opens a large and deep cove five-eighths of a mile wide at its mouth, and called Kent's Cove. It affords good anchorage in from ten to eighteen feet and is almost entirely unobstructed. Its shores are for the most part cleared and cultivated. Its eastern point of entrance, called **Indian Point**, is of moderate height, thinly dotted with trees and has a few houses to the eastward of its extremity. Its western point, which separates this cove from Waterman's Cove, is almost entirely bare, low and flat near the shore, but rising to seventy feet an eighth of a mile back, where are two or three houses and cultivated fields. It is called **Fish's Point.** **Kent's Cove.**

Crossing the mouth of Kent's Cove and passing to the westward of Calderwood's Point, there will be seen ahead, and on the northern side of the passage, about three-quarters of a mile off, a rocky point of moderate height, called Iron Point, with two small spruce trees near its southern end, and its summit covered with spruce and fir. Behind it and to the westward will be seen the houses in the village of North Haven, and to the northward the land rises gradually, and is diversified with wooded, cleared and cultivated lands. Iron Point forms the southwestern point of entrance to a large cove just to the westward of Kent's Cove, affording anchorage in from six to ten feet at low water, and called **Waterman's Cove.** **Iron Point.**

Opposite to Iron Point, and on the southern side of the Thoroughfare, is Zeke's Point, the northwestern end of Calderwood's Point. It will appear low and rocky, with two or three scattered spruce trees upon it; and between it and Iron Point is the narrowest part of the Thoroughfare;—the channel being only about four hundred yards wide from shore to shore and obstructed by dangerous ledges. On the western side of the point the shore turns abruptly to the southward, forming a large cove, called **Seal Cove**, from the southern side of which makes off **Mill River**, which, running to the southward for nearly a mile and a half, almost separates Vinal Haven Island into two parts,—there being but a very narrow strip of land between the head of this river and **Pleasant River**, which penetrates the eastern shore along the southern side of Calderwood's Neck. Seal Cove, the entrance to which is between Zeke's Point on the east and Hopkins' Point on the west, affords good anchorage in from six feet to seven fathoms, soft bottom; but it is obstructed by a middle ground with eight feet water. From Zeke's Point to its head the distance is one mile and a quarter. **Zeke's Point.**

Hopkins' Point is of moderate height, rocky and bare of trees, and is quite bold-to;—four fathoms being found within fifty yards of the rocks. On its southern side makes in to the westward **Perry's Cove**, into which eleven feet may be carried, but which is of no special importance. Opposite to Hopkins' Point, on the northern side of the Thoroughfare, is the village of **North Haven**, built upon the low shore at the base, and a little to the southeastward of **Kent's Hill**, a round and grassy head, which is very conspicuous. The shore in the vicinity of the settlement has many outlying ledges and sunken rocks and must not be closely approached; but the southern shore is quite bold-to. To the westward of the village the land is partly cleared and settled; but there is very little cultivation,—the country being generally barren and rocky. **Hopkins' Point.**

When abreast of the settlement a round, rocky head will be seen to the westward and on the southern shore, about three-quarters of a mile off. Its western end is fringed with spruce trees, and it is called **Calf Point.** Opposite to it, on the northern shore, is Ames' Point, low, rocky, and dotted here and there with spruce trees. On this point rises a high, pyramidal, rocky head, looking like the traverse of an earthwork, which is one of the ranges for entering the Thoroughfare from the westward. On the western side of Ames' Point makes in what is known as **Southern Harbor**, a large cove, running in a northeasterly direction for about a mile and three-eighths, and affording excellent anchorage **Ames' Point.**

in from three to four fathoms. The entrance from the eastward, however, is obstructed by **The Dumplings**, a group of low, rocky islets extending E. and W. from Ames' Point for nearly five-eighths of a mile, and surrounded by ledges and shoals. The middle and largest of these islets has a thick growth of small spruce upon it, and is called **Cross Island.** The others are almost entirely bare.

Opposite to Cross Island, *on the southern* side of the Thoroughfare, is **Young's Point,** rocky, of moderate height, covered with grass, and having a group of fir and spruce on its northern slopes. Half a mile to the eastward of it makes in **Young's Cove,** small and very shallow,—having only two feet in it at low water.

Amesbury's Point. Amesbury's Point, the western point of entrance to Southern Harbor, is of moderate height, almost entirely bare of trees, and mostly under cultivation. The channel into the harbor leads between this point and The Dumplings and is exactly one-third of a mile wide. *Anchorage for* small vessels may be had in what is called **Ames' Creek,** making in on the western side of the point, and having from nine to fifteen feet at low water.

Fish's Head. From Young's Point, on the southern side of the Thoroughfare, the shore of Vinal Haven turns to the southwestward and the passage rapidly widens,—being a mile wide at Fish's Head, just below. This head is about a quarter of a mile to the southwestward of Young's Point, and is round, rocky, and covered with grass. There is a small shallow cove on the southern side of the head.

The Sugar Loaves. About three-quarters of a mile to the southwestward of Young's Point, and a little over a quarter of a mile from the eastern shore, will be seen The Sugar Loaves, two large, round, bare rocks, showing as one from this point of view, with a curious nick in the top. They are bold-to on their eastern and western sides, with from five to seven fathoms all around them. It is usual to pass to the southeastward, although the passage to the westward of them is much the wider of the two. On approaching these rocks closely, they appear of a peculiar orange color, owing to the moss upon them; and from Brown's Head Light-house their southern end bears **NW. ½ N.**, about five hundred yards distant, and their northern end **NW. by N. ½ N.**, five hundred and fifty yards distant.

Brown's Head and Light-house. Five-eighths of a mile below Fish's Head, and seven-eighths below Young's Point, is Brown's Head, which, from the northeastward, will appear high and rocky, covered with grass, and dotted with clumps of fir and spruce. On approaching it a square, white light-tower will be seen on its extreme eastern point, attached to a small dwelling-house of the same color. This is Brown's Head Light-house, the guide to this Thoroughfare from the westward. The tower is of brick, whitewashed, twenty-three feet high, and shows a **fixed white light,** of the fifth order of Fresnel, from a height of *thirty-nine feet above the sea,* visible eleven miles. Its geographical position is

Latitude ..... **44° 6′ 41″ N.**
Longitude ..... **68° 54′ 34″ W.**

This light is not exhibited when the Thoroughfare is obstructed by ice.

Brown's Head is quite bold-to,—six fathoms being found within one hundred yards of the light-house.

The western shore of the Thoroughfare from Amesbury's Point to Crabtree Point (the western point of entrance) is mostly cleared land, undulating, covered with a scanty growth of grass, with a few lone trees dotting the surface at wide intervals.

Crabtree Point. Crabtree Point is a mile and three-quarters below Amesbury's Point and almost exactly opposite to Brown's Head,—the passage between it and the head being a mile and an eighth wide. The point is low and rocky, with a scanty growth of grass, and has two spruce trees standing close together some distance back from the southern extremity. Many dangerous ledges lie off its shores to the eastward, southward and southwestward, and it is not safe to approach it closely from any direction.

On the eastern shore, below Brown's Head, the shore-line is very irregular, forming several small coves, which are, however, of no importance. Many ledges and bare rocks lie off this shore between Brown's Head and Crockett's

Crockett's Point. Point, and it is not safe to approach it nearer than one-third of a mile. Crockett's Point is about seven-eighths of a mile below Brown's Head. It is rocky, of moderate height, and covered only with a scanty growth of grass. Behind it makes in to the northward a long cove, called **Crockett's Cove,** in which anchorage may be found in from one to four fathoms.

One-third of a mile **S SW.** from Crockett's Point lies Dogfish Island, which is rocky, of moderate height, and covered with grass except on its western end, where there are a few stunted spruce trees near the foot of the slope.

Dogfish Island. Between this island and Crockett's Point is a passage, with not less than five fathoms, leading to the southeastward into what is known as **Leadbetter's Narrows,** and thence into Hurricane Sound and Carver's Harbor. The channel hugs the Dogfish Island shore at the western entrance, as there is *a bad ledge, out at half-tide,* nearly midway between the island and Crockett's Point; and there is no passage to the northward of it.

DANGERS

IN APPROACHING AND ENTERING FOX ISLANDS THOROUGHFARE FROM THE EASTWARD.

Babbidge's Island Ledges. The southern and southeastern shores of Babbidge's Island are shoal and must not be approached closely. A long reef extends from the southeastern shore in about a **S SE.** direction for five hundred yards, in places bare at half-tide, in others at low water, in some places always out, and in others always covered. Seven feet at mean low water is found on the extreme southeastern point of this ledge, five hundred yards from shore, and five

PLATE No. 3

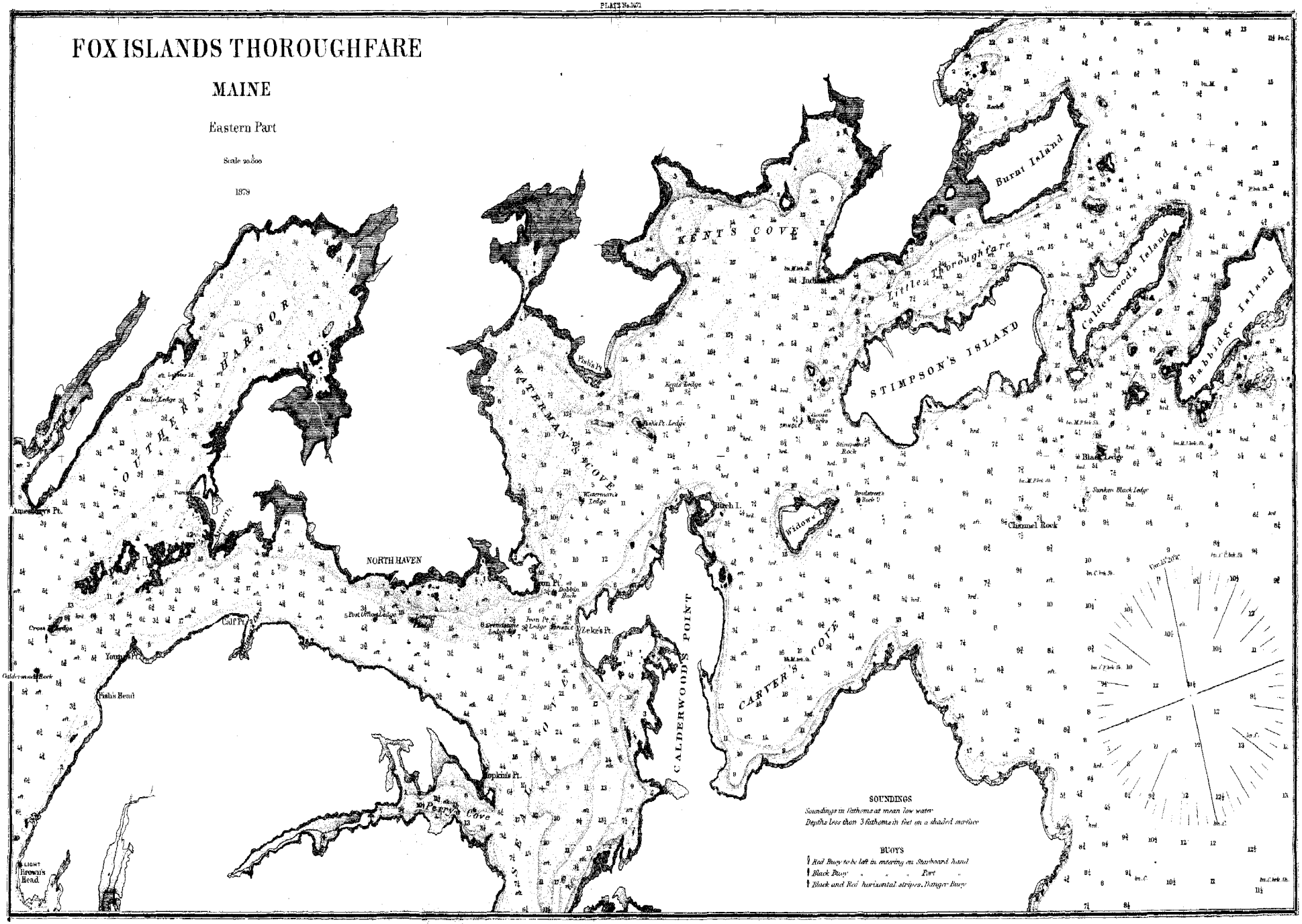
FOX ISLANDS THOROUGHFARE

MAINE

Eastern Part

Scale 20,000

1879



feet on a detached rock three hundred and fifty yards to the southward of the southwestern end of the island. Four hundred yards SW. ¾ W. from the southwestern end of Babbidge's Island lies a six feet ledge, surrounded by deep water. It may be passed on either side,—being bold-to,—but it is usual to pass well to the southward of it; and it is not in the way unless a vessel is standing to the northward on a wind. *Dangers--Fox Islands Thoroughfare.*

Three hundred and fifty yards to the westward of this ledge, and three-eighths of a mile W. by S. from the southwestern end of Babbidge's Island, lies Black Ledge, a small bare rock with half-tide ledges extending to the northward, but bold-to on its southern side. A little over two hundred and fifty yards SW. ½ S. from it lies a detached rock, with seven feet at mean low water and good water all around it, called *Sunken Black Ledge*, and sometimes *Fox Island Ledge*. A black spar-buoy (No. 9) is placed on its southern side, and is the first buoy met with on entering the Thoroughfare. It bears E. ¼ S. from Channel Rock, five hundred yards distant, and the courses pass to the southward of it. Between Black Ledge and Sunken Black Ledge there is not less than thirty-one feet at low water through a channel one hundred and twenty-five yards wide, while on the southern side of the buoy the depth varies from four to ten fathoms. This ledge is called, in the official Buoy List, *Black Ledge Shoal.* *Black Ledge.*

Channel Rock (see page 209) is quite bold-to, and may be passed on either side; but if standing to the northward, between it and Sunken Black Ledge, be careful not to go to the northward of Black Ledge bearing E. ¼ S., or the southwestern point of Babbidge's Island E. ½ N., as there are several sunken rocks to the northward of this line at distances from Black Ledge varying from three hundred yards to a quarter of a mile. When to the westward of Channel Rock the passage is clear, and you may stand to within a hundred and fifty yards of Stimpson's Island with six fathoms water. *Channel Rock.*

The Vinal Haven shore, as far as Carver's Cove, may be safely approached within three hundred yards with not less than four fathoms. The course now leads to the westward between Stimpson's and Widows' islands, and it is necessary to look out first for Bradstreet's Rock, a detached ledge, with nine feet at mean low water, lying two hundred and fifty yards to the eastward of Widows' Island. There are from five to six fathoms water between it and the island, but this passage is not often used. The rock is not buoyed, but is quite bold-to, and the course passes nearly one hundred and fifty yards to the northward of it. A buoy will be recommended on this ledge. *Bradstreet's Rock.*

There is an excellent passage to the southward of Widows' Island and between that island and Calderwood's Point, four hundred yards wide at its narrowest part, with from three to ten fathoms in it and entirely unobstructed. It is, however, not so direct as that to the northward, and is seldom used.

Nearly opposite to Bradstreet's Rock, on the northern side of the channel, is another pinnacle rock, called Stimpson's Rock. It has four feet at mean low water, lies off the western end of Stimpson's Island a little over one hundred yards from shore, is very bold-to, and is not buoyed. A buoy will, however, be recommended upon this rock. *Stimpson's Rock.*

When up with Stimpson's Rock, a black spindle surmounted by a wheel will be seen to the northward and westward, a quarter of a mile off. This is on Goose Rocks, bare at half-tide, lying off the western end of Stimpson's Island nearly four hundred yards from shore. There is a passage, with nearly five fathoms, leading into Kent's Cove, inside of these rocks, but it is not safe. There are many ledges and bare rocks to the northeastward of Goose Rocks, extending nearly to Indian Point, (the eastern point of entrance to Kent's Cove;) and there is a sunken rock with five feet at low water one-third of a mile E. by S. ½ S. from Fish's Point. This is called *Kent's Ledge*, and is the only dangerous obstruction found in the cove after passing Goose Rocks. *Goose Rocks.*

The spindle on Goose Rocks should not be approached nearer than one hundred yards, as shoal water makes off to the southward for about seventy-five yards. When up with it the course turns more to the westward, and a black spar-buoy will be seen ahead and nearly five-eighths of a mile off. This is on Fish's Point Ledge, sometimes called *Thomas' Ledge*, bare at three-quarters ebb, and lying SE. by S. ½ S. from Fish's Point, a quarter of a mile off. There is no passage between it and the point; and shoal water makes from the dry ledge all the way to the buoy. The latter, which is marked No. 7, and placed in eighteen feet water on the southeastern point of the ledge, must always be left to the northwestward. Vessels must not, under any circumstances, pass to the westward of it. When up with it the course turns to the southwestward, passing well to the southward of a red and black spar-buoy off the entrance to Waterman's Cove, and leading directly towards a red spindle two thirds of a mile to the southwestward, with a black buoy a little beyond it. The red and black buoy is on Waterman's Ledge, the red spindle on Iron Point Ledge, and the black buoy on Grindstone Ledge. *Fish's Point Ledge.*

Waterman's Ledge is a detached rock, with four feet water, lying NE. ¾ E. from Iron Point, distant one-third of a mile. Vessels bound into Waterman's Cove may pass on either side of it, only giving it a berth if passing between it and Iron Point; but the course through the Thoroughfare leads two hundred and fifty yards to the southward of it. *Waterman's Ledge.*

Iron Point Ledge is a half-tide rock, almost exactly in the middle of the passage between Zeke's Point and Iron Point, and about an eighth of a mile from the latter. Shoal water extends from it to the southward nearly two hundred yards. Not less than four and three-quarter fathoms can be taken between this ledge and Zeke's Point, but it is usual to pass to the northward of it, (between it and Iron Point,) and the spindle is so colored. The spindle is surmounted by a circular cage, is placed on the dry part of the ledge, and should receive a berth to the southward of not less than one hundred yards.

Iron Point Ledge.

In approaching Iron Point Ledge it is necessary to be careful not to go too near Iron Point until abreast of the spindle, as there is a dangerous sunken ledge, called Dobbin Rock, lying about one hundred and seventy-five yards **SE.** by **E.** ½ **E.** from Iron Point. It has eight and a half feet at mean low water, is not buoyed, and, as the sailing-lines pass very close to it, great care is necessary in approaching it. A buoy will be recommended on this ledge, as the channel here is only one hundred yards wide and the rock is very dangerous.

Dobbin Rock.

When up with Iron Point Ledge, the black spar on Grindstone Ledge will be seen about three hundred yards ahead. This ledge has four feet at low water, and lies an eighth of a mile to the southwestward of Iron Point. The buoy is marked No. 5, placed in seventeen feet on its southern end, and vessels should pass to the southward of it. When nearly up with Hopkins' Point the course turns to the northwestward, with a black spar-buoy about five hundred yards off and a little to the northward of the course, and a red and black buoy a short distance to the westward of the former. Both buoys lie off the village of North Haven.

Grindstone Ledge.

Lobster Ledge. The black spar (No. 3) is on Lobster Ledge, with two feet at low water, and bearing from Iron Point **W.** ½ **N.**, distant nearly half a mile, and nearly an eighth of a mile from the wharf-line of the settlement. All of this shore, between Grindstone Ledge and Lobster Ledge, is full of shoals and dangerous of approach. The red and black spar-buoy is on Post-Office Ledge, about three hundred and fifty yards **W.** by **N.** ½ **N.** from Lobster Ledge, and also on the northern side of the passage. It is a detached rock, with eight feet at mean low water, lying about three hundred yards from the North Haven shore and nearly five-eighths of a mile **W.** ½ **N.** from Iron Point. The buoy is on top of the ledge, and is usually left to the northward; but fourteen feet at low water may be taken through between it and the North Haven shore. When past it the channel is clear to the northwestward until up with **Brown's Cove,** (on the eastern side of Ames' Point,) when it in necessary to look out for *a seven-feet rock* lying two hundred yards **S.** ½ **E.** from the southeastern end of Ames' Point. It is not buoyed; and as there is *a shoal making out to the northeastward* from Calf Point, on the southern side of the channel, one hundred and fifty yards, this part of the channel is somewhat narrow. As a rule, however, it is safe to pass Calf Point at a distance of an eighth of a mile.

Post-Office Ledge.

Cross Island Ledge. When past Calf Point the course turns to the westward, leading between The Dumplings and Young's Point; and when off the latter a black spar-buoy will be seen three-eighths of a mile to the westward. This is on Cross Island Ledge, bare at low water, and lying one-fourth of a mile **SW.** by **W.** ½ **W.** from the easternmost of The Dumplings and a third of a mile **NW.** by **W.** from Young's Point. It marks the eastern point of entrance to Southern Harbor as well as the northern limits of the Thoroughfare. The buoy is marked No. 1, and is placed in three fathoms off the southwestern end of the ledge.

Nearly three hundred yards **SW.** ½ **S.** from Cross Island Ledge, and a quarter of a mile **NW.** by **W.** ½ **W.** from Fish's Head, is Calderwood's Rock, a small pinnacle rock with six and a half feet water, and marked by a spar-buoy, painted red and black in horizontal stripes, placed on its southern side in three fathoms. The courses pass to the eastward of it, leading out of the Thoroughfare, and about one hundred and seventy-five yards to the northward of it if bound into Southern Harbor; but in standing across the passage in its vicinity on a wind it may be avoided, should the buoy be gone, by passing not less than two hundred and fifty yards to the southward of the Cross Island Ledge buoy.

Calderwood's Rock.

The course now turns to the southwestward, passing between Brown's Head and **The Sugar Loaves.** The latter, as before mentioned, are bold-to on their eastern and western sides, but shoal on the northern and southern sides. Two hundred yards **NE.** ½ **E.** from their northern end is a small detached rock, called The Fox's Ears, bare at low water, quite bold-to, and marked by a black spindle with cage on top. There is a channel with three and a quarter fathoms between it and The Sugar Loaves. In passing to the northward of the latter, therefore, they should receive a berth of three hundred yards to the southward; and in passing to the southward of them, they should not be approached within less than one hundred and seventy-five yards.

The Fox's Ears.

The western shore of the Thoroughfare, from Amesbury's Point nearly to Crabtree Point, is quite bold-to, and may be safely approached within one hundred and fifty yards with not less than five fathoms at low water; but off Crabtree Point are some of the most dangerous and extensive ledges in the Thoroughfare.

Crabtree Point Ledge, making off from the eastern extremity of the point in an E. ¼ S. direction, is composed of a number of rocks, bare at half-tide, with small detached ledges to the eastward of them. Five feet at low water is found on the eastern end of this ledge a little over four hundred yards from the shore, and two feet a little to the southward of this and a quarter of a mile from shore. This ledge is not buoyed, and is very dangerous. To avoid it, when standing to the northwestward in its vicinity, do not go to the northward of the beacon on Fiddler's Ledge bearing SW. by W. ¾ W. *Crabtree Point Ledge.*

Fiddler's Ledge lies SW. by S. from Crabtree Point,—its southern end being distant from that point exactly half a mile. It is bare at half-tide, and is surmounted by a large, square, stone beacon with a mast and cask on top, painted black. The beacon is near the southern end of the ledge and marks the northern limits of the channel,—there being no passage to the northward of it, even for vessels of light draught. *Fiddler's Ledge.*

Dogfish Ledges are a number of sunken and bare rocks, with good water between them, lying to the westward and northwestward of Dogfish Island. The northeastern ledge is composed of four rocks, bare at low water, lying in a line nearly N. and S. from each other,—the northernmost being three-quarters of a mile NW. ¼ N. from the northern end of Dogfish Island and the same distance W. by N. ¾ N. from the extremity of Crockett's Point. The group is about five hundred yards long, has deep water on all sides, and is marked by a red spindle with cage on top, placed on the highest part, and bearing from the beacon on Fiddler's Ledge SE. ⅜ S., distant nearly five-eighths of a mile, and from Brown's Head Light-house SW. by W., distant one mile and a quarter. The channel between them and Fiddler's Ledge has from five to twelve fathoms at low water. About one-third of a mile SW. ½ S. from the spindle lies *a sunken ledge with eight feet*, which is not buoyed. From Fiddler's Ledge beacon it bears S. by E. ¼ E., distant nearly three-quarters of a mile, and from four to six fathoms can be taken between it and the northernmost Dogfish Ledge. Four hundred yards to the southwestward lies *another with nine feet*, which bears from the spindle on the northern ledge SW. by S., eleven hundred yards distant, and from Fiddler's Ledge beacon S. ½ E., distant seven-eighths of a mile. It is not buoyed. About midway between these ledges and Dogfish Island are other groups lying near N. and S., mostly bare at half-tide, and with deep channels on their eastern and western sides; but none of these passages should be used by strangers, even at low water, as there are quite a number of sunken ledges in them which are not buoyed. *Dogfish Ledges.*

When up with the red spindle on Dogfish Ledges different courses are steered, according as you are bound to the westward or up or down the bay. Bound for Muscle Ridge Channel or down the bay, the course continues to the southwestward towards a red spar-buoy about a mile and a half off, with a black spar nearly half a mile to the eastward of it; and there will appear almost directly ahead a large nun-buoy, painted red and black in horizontal stripes. The latter is the "Whistling-Buoy," sounded by the action of the sea, and placed in twenty fathoms—

	Miles.
Stand-in Point bearing NE. ¼ N.	nearly 1 ¼
Fiddler's Ledge Beacon NE. by E. ⅔ E.	⅞
Brown's Head Light-house E. by N. ½ N.	about 2 ¼
Spindle on Dogfish Ledge E. Southerly	1 ⅛

The Whistling-Buoy bears from Owl's Head Light-house E. by S. ⅓ S., distant three miles and three-quarters, and from the middle of the entrance to Fisherman's Island Passage E. by N. ½ N., distant four miles and three-eighths.

The red spar-buoy is on the northernmost and the black spar on the northeasternmost of the Inner Bay Ledges, a very dangerous group of sunken and bare rocks, lying in a line nearly N. and S. from each other, and about five-eighths of a mile in length. Their northern end bears W. ½ S. from Crockett's Point, a little over two miles distant, and SW. from the beacon on Fiddler's Ledge, distant one mile and three-eighths. The southern end, out at low water, bears W. by S. ¾ S., from Crockett's Point, two miles and a quarter distant, and from the beacon on Fiddler's Ledge SW. by S., distant one mile and seven-eighths. Their northeastern end bears from Crockett's Point W. by S. ¼ S., distant a mile and three-quarters, and from Fiddler's Ledge beacon SW. by S. ¼ S., a mile and a quarter, and is marked by a black spar-buoy (No. 1) placed on its northern end in five fathoms. The northern end of the ledges is marked by a red spar-buoy (No. 4) placed one hundred feet to the northwestward in five fathoms. The southernmost ledge is marked by a second-class iron can-buoy (No. 2) painted red, placed two hundred feet to the westward in seven fathoms. This latter is placed to mark the bay channel and is usually left to the eastward; but it is possible to pass to the southward of it, and through the Dogfish Ledges to Brown's Head, with not less than four and three-quarter fathoms at low water. This passage is not, however, suitable for strangers. *Inner Bay Ledges.*

There are five of the Inner Bay Ledges,—the northernmost, with four and a half feet; the easternmost, with four feet; the two southern, bare at low water; and the middle ledge, with three and a half feet.

Vessels bound to Rockland or up the bay change course to the westward on coming up with the red spindle on Dogfish Ledges, and pass about a quarter of a mile S. of Fiddler's Ledge; and when abreast of it a black spindle will be seen to the northwestward, about five-eighths of a mile off. This is on Drunkard's Ledge, a dangerous half-tide ledge, lying W. by N. ½ N. from Fiddler's Ledge beacon, distant nearly five-eighths of a mile. There is a good channel, with from four to seven fathoms, between this and Fiddler's Ledge, but it is not advisable for strangers to use it. The spindle is surmounted by a cage, and is placed on the rock. When past it and in the bay the channel is clear in all directions.

Drunkard's Ledge.

Stand-in Point Ledge.

The western extremity of Crabtree Point is sometimes called **Stand-in Point**, and dangerous ledges and sunken rocks extend from it all the way to Fiddler's Ledge. A half-tide ledge, called Stand-in Point Ledge, lies W. from it, about two hundred yards distant; and from this to Fiddler's Ledge it is all shoal. Therefore this point must not be approached on its western side nearer than a quarter of a mile.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING FOX ISLANDS THOROUGHFARE.

I. ***From the Eastward, through East Penobscot Bay.***—On the N. course for Eagle Island Light-house, when the southern end of Merchant's Island bears E. ⅝ N., the summit of Kimball's Head E. by S. ¾ S., and Mark Island Light-house (in range with Scraggy Island) NE. by N. ⅞ N., steer NW. by N., which course will lead, with not less than ten fathoms, up to the entrance. On this course, when the western end of Babbidge's Island bears NE. by N. ⅝ N., distant five-eighths of a mile, and the middle of Widows' Island NW. by W. ¾ W., distant nearly a mile and a half, steer NW. by W. ⅛ W., heading between Stimpson's and Widows' islands, passing to the southward of Channel Rock, midway between Stimpson's and Bradstreet's rocks, and carrying not less than seven fathoms. On this course, when the western end of Stimpson's Island bears NE. by N. ¾ N., distant four hundred yards; the eastern end of Widows' Island SW. by S. ½ S., distant three hundred yards; and Goose Rocks spindle NW. ¾ N., distant nearly four hundred yards, steer W. by N. ⅝ N., carrying not less than seven fathoms, and heading nearly for the buoy on Fish's Point Ledge. When within an eighth of a mile of this buoy, with Iron Point bearing W. by S. ⅝ S. and Birch Island S. by E. ¾ E., distant nearly four hundred yards, steer SW. by W. ¾ W., carrying not less than three and a quarter fathoms, and passing midway between Dobbin Rock and the spindle on Iron Point Ledge. Continue this course until Ames' Point bears NW. by W., when steer for it, carrying not less than four fathoms, until within three hundred yards, and you have just passed Young's Cove, whose western point of entrance (Calf Point) will bear S. ⅞ W., distant a little over three hundred yards. Now steer W. ½ S., having the black buoy on Cross Island Ledge a little to the northward and the red buoy on Calderwood's Rock a little to the southward of the course, and carrying not less than four fathoms. When Amesbury's Point bears N. by W. ½ W. Nearly, and Crabtree Point W. by S. ¼ S., steer SW. ⅝ W., passing to the eastward of The Sugar Loaves; and, when abreast of the spindle on the northern end of Dogfish Ledges, which should be about three hundred yards off, and the beacon on Fiddler's Ledge bears NW. ⅜ N., distant a little over three-eighths of a mile, Owl's Head Light-house will bear W. by N., and W. by S. ¼ S. will lead into Muscle Ridge Channel through Fisherman's Island Passage; and W. by N. ¾ N. will lead into Rockland Harbor.

If bound down the bay; continue the W. by S. ¼ S. course until Owl's Head Light-house bears NW. by W. ⅝ W. and Indian Island Light-house (at the entrance to Rockport) N NW., when steer S. by W. ¼ W., which will lead safely to sea. *If bound to Rockport;* continue the W. by N. ⅜ N. course towards Rockland Entrance until to the westward of Drunkard's Ledge, with Owl's Head Light-house bearing W. ⅝ N. and Indian Island Light-house NW. by N. ⅜ N., and steer NW. ½ N., which will lead up with the entrance by the main channel; or NW. by N. ⅛ N., which will lead to the northward of Porterfield's Ledge, between it and Indian Island. *If bound to Camden or up West Penobscot Bay;* on the course W. by N. ¾ N., when Owl's Head Light-house bears W. ⅝ N. and Indian Island Light-house NW. by N. ⅜ N., as before, steer N. by W. ⅛ W. and follow the directions for the harbor; or continue the W. by N. ¾ N. course, as before, until Owl's Head Light-house bears W. ¼ N. and Indian Island Light-house NW. by N. ¾ N., when steer N. ¾ E. and follow the directions for the bay.

The above courses pass nearly a quarter of a mile to the southward of the black buoy on Sunken Black Ledge; two hundred yards to the southward of Channel Rock; one hundred and fifty yards to

PLATE No. 1072

FOX ISLANDS THOROUGHFARE

MAINE

Western Part

Scale 20,000

1879

BUOYS

Red Buoys to be left in entering on Starboard hand
Black " " " " Port "
Black and Red horizontal stripes - Danger Buoys

SOUNDINGS

The Soundings are expressed in feet to 18 feet, or within the dotted surfaces, beyond them in Fathoms and show the depth at mean low water, the plane of reference. The dotted surfaces beyond low water mark represent the bottom within the respective depths of 6, 12 and 18 feet.

The characteristic soundings only are given on the chart, they are selected from the numerous soundings taken in the survey, so as to represent the figure of the bottom.

NORTH HAVEN ISLAND

SOUTH HARBOR

VINAL HAVEN ISLAND

LEADBETTER'S ISLAND

Ames Ledge Pt.
Cross Ledge
Seal Ledge
Foster's Pt.
Calderwood's Rock
Fish's Head
Young's Pt.
Rock Eave
SPINDLE
Sugar Loaves
Brown's Head
LIGHT
Stanton Pt.
Dolbree Pt.
Dolbree Ledge
Stanton Ledge
Drunkard's Ledge
Fiddler's Ledge
BEACON
Crockett's Pt.
Crockett's Pt. Ledge
Leadbetter's Narrows
Green I.
Gravel Island
Nautical Miles

Sailing Directions---Fox Islands Thoroughfare.

the northward of Bradstreet's Rock; two hundred yards to the southward of Stimpson's Rock; two hundred yards to the southward of the spindle on Goose Rocks; one hundred and seventy-five yards to the southward of Fish's Point Ledge; a little over three hundred yards to the southeastward of Waterman's Ledge; fifty yards to the southeastward of Dobbin Rock; seventy-five yards to the northward of the red spindle on Iron Point Ledge; one hundred yards to the southward of the black buoy on Grindstone Ledge; one hundred and fifty yards to the southward of Lobster Ledge; seventy-five yards to the southward of Post-Office Ledge; one hundred and twenty-five yards to the southward of the seven feet rock off Brown's Cove; about eighty yards to the northward of the shoal off Calf Point; three hundred yards to the eastward of Cross Island Ledge; two hundred yards to the eastward of Calderwood's Rock; two hundred and fifty yards to the eastward of The Fox's Ears; about two hundred yards to the eastward of The Sugar Loaves; nearly half a mile to the eastward of Crabtree Point Ledge; an eighth of a mile to the northward of the spindle on Dogfish Ledges; half a mile to the southward of Fiddler's Ledge beacon; a quarter of a mile to the northward of the black buoy, and three hundred yards to the northward of the red buoy on Inner Bay Ledges;—the Whistling-Buoy being left three hundred yards to the northward. Bound to Rockland, or up the bay, the courses steered pass about an eighth of a mile to the southward of Fiddler's Ledge beacon; about two hundred yards to the southward of the spindle on Drunkard's Ledge; and nearly a quarter of a mile to the northward of the Whistling-Buoy.

On the above courses, to enter Kent's Cove.—On the **NW.** by **W.** $\frac{1}{8}$ **W.** course, after passing Channel Rock, continue past Goose Rocks spindle and until the western end of Widows' Island bears **S.** by **W.** $\frac{3}{4}$ **W.**, when steer **N.** $\frac{1}{2}$ **E.**, which will lead safely into the cove, passing about two hundred and fifty yards to the westward of Goose Rocks and about eight hundred yards to the eastward of Kent's Ledge. On this course there will be found soundings varying from ten and a half fathoms to fifteen feet,—the latter depth being found near the head of the cove.

Coming from the Westward, to enter Kent's Cove.—When abreast of the red spindle on Iron Point Ledge, steer **NE.** by **E.** $\frac{3}{4}$ **E.** for Indian Point, and continue this course until within one-third of a mile of it, with the southern extremity of Fish's Point bearing **W.** $\frac{3}{4}$ **N.**, with five and a half fathoms, and the Little Thoroughfare fairly open to the eastward. Now steer **N.** $\frac{1}{2}$ **E.** towards the head of the cove, or **NE.** $\frac{1}{4}$ **N.** past Indian Point, anchoring in from six to fourteen feet at low water. The courses from the westward pass fifty yards to the southward of Dobbin Rock; three hundred yards to the southeastward of Waterman's Ledge; one hundred and seventy-five yards to the southeastward of Fish's Point Ledge; and about three hundred and fifty yards to the southeastward of Kent's Ledge.

To enter Waterman's Cove.—When about midway between Fish's Point Ledge and Waterman's Ledge steer **NW.** $\frac{1}{2}$ **W.**, which will lead into the cove, where there is anchorage in from six to thirteen feet at low water.

To enter Seal Cove in the best water.—Continue the **SW.** by **W.** $\frac{3}{4}$ **W.** course from between Fish's Point Ledge and Birch Island until within one hundred and fifty yards of the shore and the eastern extremity of Hopkins' Point bears **S.** $\frac{1}{2}$ **W.**, when steer **S.** by **E.**, aiming to give the point a berth of about one hundred yards; and continue this course (on which there is not less than three and three-quarter fathoms) until abreast of the rocky islet lying off the southern end of Hopkins' Point and in the entrance to Perry's Cove. Give this islet a berth of not less than one hundred yards, passing in about five and a half fathoms; and **S.** $\frac{1}{2}$ **W.** will lead with not less than six fathoms to the anchorage. If of moderate draught, (twelve feet or less,) **S SW.** may be steered from abreast of Iron Point spindle, on which course the least water will be fourteen feet. When exactly abreast of the mouth of Perry's Cove the water will deepen to four or five fathoms, and **S.** $\frac{1}{2}$ **W.** will lead to the head of the cove. Or a light-draught vessel coming from the eastward may round Zeke's Point close-to and steer **S.** by **W.** $\frac{1}{2}$ **W.**, giving the point a berth of about eighty yards. From four to five fathoms will be found at this distance from the point, and when to the southward the soundings will rapidly increase, there being in some places twenty fathoms, in what is known as **The Deep Hole.** Passing to the southward of this, the course will cross the middle ground in not less than nine feet at low water, and when the small island off the southern end of Hopkins' Point bears **NW.** $\frac{3}{4}$ **W.**, **SW.** $\frac{1}{2}$ **W.** will lead towards the head of the cove with not less than eleven feet at low water. This cove is an excellent anchorage in easterly or westerly gales.

Sailing Directions--Fox Islands Thoroughfare.

To enter Southern Harbor from the Eastward.—Continue the **W.** ½ **S.** course from between Calf Point and Ames' Point until within one hundred and fifty yards of Calderwood's Rock buoy, when steer to the westward, aiming to pass midway between Cross Island Ledge black buoy and the red buoy on Calderwood's Rock; and when about two hundred and fifty yards to the westward of the former, with Amesbury's Point bearing **N NE.** and Brown's Head Light-house **S.** by **W.** ⅛ **W.**, steer **NE.** ½ **E.** past Amesbury's Point, and until the southern extremity of Ames' Point bears **SE.** ¼ **S.**, when there will be four fathoms, and **NE.** by **E.** ¾ **E.** leads up the middle of the channel about midway between the eastern and western shores. The above courses pass seventy-five yards to the southward of the black buoy on Cross Island Ledge; one hundred and fifty yards to the northward of Calderwood's Rock; again, two hundred and twenty-five yards to the westward of Cross Island Ledge; and two hundred yards to the westward of the western end of The Dumplings.

To enter Southern Harbor from the Westward.—Bring Brown's Head Light-house to bear **E NE.** and run for it until the beacon on Fiddler's Ledge bears **N.** ¼ **W.**, five hundred yards distant, when there will be about ten fathoms, brown mud bottom, and **NE.** ¼ **E.** will lead safely in with not less than five fathoms. Continue this course until past Ames' Point and The Dumplings, and the southern extremity of the former bears **SE.** ¼ **S.** as before, when steer **NE.** by **E.** ¾ **E.** to the head of the harbor. These courses pass a quarter of a mile to the eastward of the beacon on Fiddler's Ledge; about one-third of a mile to the westward of the spindle on Dogfish Ledges; three hundred and fifty yards to the eastward of Crabtree Point Ledge; an eighth of a mile to the westward of The Sugar Loaves; two hundred yards to the westward of The Fox's Ears; one hundred and seventy-five yards to the westward of Calderwood's Rock; and about two hundred and twenty-five yards to the westward of the black buoy on Cross Island Ledge.

Having come through Deer Island Thoroughfare, to enter the Fox Islands Thoroughfare.—When past the buoy on Mark Island Ledge and Mark Island Light-house bears **SE.** ¾ **S. Nearly**, distant five-eighths of a mile, Eagle Island Light-house **N.** by **W. Westerly**, and Bear Island (which will appear as the westernmost point of Deer Isle) **N.** ½ **E.**, steer **W.** ¼ **N.**, which will lead across East Penobscot Bay to the entrance to the Thoroughfare. When the western end of Babbidge's Island bears **NE.** by **N.** ⅝ **N.**, distant five-eighths of a mile, and the middle of Widows' Island **NW.** by **W.** ¾ **W.**, distant nearly a mile and a half, steer **NW.** by **W.** ⅛ **W.**, and follow the directions for the Thoroughfare.

Having come through Merchant's Row, to enter Fox Islands Thoroughfare.—On the **W.** by **N.** ½ **N.** course through the Row, when Mark Island Light-house opens to the westward of Farrel's Island on a bearing of **NW.** by **N.** ⅛ **N.**, with Sparrow Island directly ahead bearing **W.** by **N.** ½ **N.** and distant five-eighths of a mile, steer **NW.** by **W.** ¾ **W.**, passing to the northward of Sparrow Island; and continue this course for about a mile and a half, until Mark Island Light-house opens to the westward of Scraggy Island on a bearing of **NE.** ⅝ **N.**, and Eagle Island Light-house bears **N.** ¾ **W. Nearly.** Now steer **W.** by **N.** ¾ **N.**, which will lead across the bay and up with the entrance to the Thoroughfare. When the western end of Babbidge's Island bears **NE.** by **N.** ⅝ **N.** and the middle of Widows' Island **NW.** by **W.** ¾ **W.**, as before, steer **NW.** by **W.** ⅛ **W.**, and follow the directions for the Thoroughfare.

II. ***To enter from the Westward and pass through Fox Islands Thoroughfare into East Penobscot Bay.***—From Fisherman's Island Passage steer **E.** by **N.** ¼ **N.**, which course will lead to abreast of the red spindle on the northern end of Dogfish Ledges. From Rockland Entrance steer **E.** by **S.** ¾ **S.**, which will also lead up to abreast of the red spindle on the northern end of the Dogfish Ledges. On this course, when the beacon on Fiddler's Ledge bears **NW.** ⅜ **N.**, distant a little over three-eighths of a mile, and Brown's Head Light-house **NE.** by **E.** ⅝ **E.**, distant a mile and a quarter, **NE.** ⅝ **E.** leads, with not less than six fathoms, between Brown's Head and The Sugar Loaves and nearly up with Young's Point. When the southern extremity of Amesbury's Point bears **N.** by **W.** ¼ **W. Nearly**, Brown's Head Light-house **SW.** ¾ **S.**, and Ames' Point **E.** by **N.** ⅝ **N.**, there will be about five fathoms; and you must steer about **E.** ¼ **N.** past Young's Point, and until Amesbury's Point bears **NW.** by **W.** ¾ **W.**, when there will be six and a quarter fathoms, and a **SE.** by **E.** course will lead with not less than four fathoms through the reach, until the eastern extremity of Hopkins' Point bears **S.** by

W. ¾ W., when there will be about four and a half fathoms, sticky bottom, and NE. by E. ¾ E. leads up to the black buoy on the southern end of Fish's Point Ledge with not less than three and a quarter fathoms. From this position steer E. by S. ⅝ S., carrying not less than seven fathoms between Widows' and Stimpson's islands, until the western end of the latter bears NE. by N. ¾ N. and Channel Rock SE. by E. ½ E.,—the latter being distant nearly seven-eighths of a mile. Now steer SE. by E. ⅛ E., which course leads safely out of the Thoroughfare with not less than eight fathoms. *But, if bound through Deer Island Thoroughfare;* when the western end of Babbidge's Island bears NE. by N. ⅝ N. and Mark Island Light-house E. ⅝ S., steer E. ¼ S., and follow the directions for the Thoroughfare. ***Sailing Directions--Fox Islands Thoroughfare.***

The above courses are merely a reversal of those from the eastward, and pass at the same distance from the several dangers.

The range for coming into the Thoroughfare from the westward is the high pyramidal head on Ames' Point (which looks like the traverse of an earthwork) just open to the eastward of The Sugar Loaves. Strangers would do well to note this, as the marks are permanent and can never be mistaken.

LIGHT-HOUSE.

Name.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Brown's Head Light-house	44 6 41	68 54 34	4 35 38.3	Fixed.	39	11

TIDES.

	Iron Point.	Carver's Cove.
Corrected Establishment	11h 1m	11h 2m
Mean Rise and Fall of tides	9.7 ft.	9.6 ft.
Mean Rise and Fall of Spring tides	10.3 ft.	10.1 ft.
Mean Rise and Fall of Neap tides	9.1 ft.	9.2 ft.
Mean duration of Rise	6h 11m	6h 16m
Mean duration of Fall	6h 14m	6h 9m

VARIATION OF THE COMPASS.

The magnetic variation at the eastern entrance to Fox Islands Thoroughfare, for 1879, is 15° 20′ W., with an approximate annual increase of about 2½′.

CASTINE HARBOR

is at the mouth of **Bagaduce River**, a very crooked stream, which takes its rise between Sedgwick and Brooksville, about three miles to the northward of Billings' Cove, (in Eggemoggin Reach,) flows to the northward and northwestward for about four miles, where it widens out into a broad bay, called **South Bay**; at the western end of which it turns to the southwestward past **North Castine**, and then to the westward, flowing into East Penobscot Bay between Dice's Head on the north and the northern end of Cape Rosier on the south. Thus, in its course, the river describes three quarters of a circle. It may be mentioned that at South Bay it sends off a long arm to the northward, called **Northern Bay**, on the eastern shore of which is built the village of **Penobscot.**

Dice's Head, the northern point of entrance to Castine Harbor, is easily recognized in coming up the bay by the white light-tower on its summit. It is about four miles above Cape Rosier and two miles and three-quarters to the eastward of Turtle Head, and forms the southeastern point of entrance to Penobscot River as well as the northern point of entrance to the Bagaduce River. It is a steep and rocky bluff, wooded on the edges with a thick growth of fir and spruce, and quite bold-to,—the rocks rising almost perpendicularly. Dice's Head Light-house is an eight-sided stone tower, sheathed with wood and painted white; and is attached to the keeper's dwelling, which is also of wood and painted brown. The tower is forty-two feet high, and shows a fixed white light, of the fourth order, from a height of one hundred and thirty feet above the sea, visible seventeen miles. Its geographical position is **Dice's Head and Light-house.**

Latitude ..... 44° 22′ 57″ N.
Longitude ..... 68° 49′ 9″ W.

Coming into Castine Harbor, two islands will be seen lying on the southern side of the passage, near the Brooksville shore. The westernmost of these, called Holbrook's Island, lies between Dice's Head and the northern point of Cape Rosier, and about a third of a mile from the latter. It extends NNE. and SSW., is about three-quarters of a mile long, rocky, and at its northwestern end shows a round, bare bluff, whence the slopes descend to much lower land, covered with a thick growth of small trees. Next to the northward is Nautilus Island, also on **Holbrook's and Nautilus Islands.**

the southern side of the passage. It is low and rocky, with undulating surface of moderate height, dotted here and there with clumps of fir and with one or two houses on it. The passage to the southward of these islands, between them and the Brooksville shore, is not suitable for strangers,—being narrow, dangerous and obstructed by many ledges, (bare and sunken,)—and is of no importance, as it is closed at its northeastern end by a dry bar extending from Nautilus Island to the mainland. There is, however, deep water (from eighteen feet to seven fathoms) in the bay inclosed between these islands and the Cape Rosier shore; and those who are acquainted may make a safe and well sheltered anchorage by passing between Nautilus and Holbrook's islands, through a narrow gut having five fathoms at low water, but obstructed by a two feet rock called **Nautilus Rock.**

Fort Point. On the northern side of the river, after passing Dice's Head, Fort Point is next reached, a grassy head, upon which is built an earthwork. This point has a very gradual rise, its summit is covered with houses, and the town is seen stretched along the northern shore just to the eastward of it.

Above Nautilus Island the river spreads away to the southward into a large bay, full of islands, called Smith's Cove, and sometimes, though erroneously, **Lawrence's Bay,**—making into the Brooksville shore between **High Head,** a wooded, rocky bluff just to the eastward of Nautilus Island, and **Henry's Point,**—a low, smooth, gently-sloping and grassy point, backed by trees, which lies exactly opposite to Castine. It is perfectly safe for strangers, of less than fifteen feet draught, to enter this cove, as there is but one obstruction—a fifteen feet spot; and if this were buoyed the entrance would be safe for the largest vessels. The islets are mostly low, rocky, and covered with a growth of scrub. The northernmost, called **Hospital Island,** is low, rocky and wooded.

Smith's Cove.

On the northern side of the peninsula on which Castine is built makes in to the westward a narrow, shallow cove called **Hatch's Cove.** Fifteen feet at low water may be taken into the mouth of this cove through a very narrow channel, not fit for strangers. Nearly opposite to, but a little above Hatch's Cove, is the village of **West Brooksville,** on low, gently sloping and nearly level land backed by an undulating thinly wooded country. A mile and a quarter above the village, and a little over two miles to the northward of Henry's Point are The Narrows, leading into South Bay; and on approaching them two little rocky and wooded islands will be seen nearest the western shore. They are called **Negro Islands**; and *a dangerous four feet rock* lies nearly three hundred yards **SE.** from the southernmost islet There is no passage to the westward of them. Here the river is extremely narrow, and strangers should not attempt to pass above Castine without a pilot. The current, especially on the ebb, rushes with great velocity through the contracted passage at The Narrows,—rendering it almost impossible for a sailing-vessel to pass through except with a fair tide. The usual anchorage is off the town, between the steamboat wharf and the red spar-buoy on The Middle Ground, where from eight to ten fathoms may be found.

The Narrows.

There is but little business in **Castine** outside of the usual fishing interest, although there is some small trade in bricks.

DANGERS

IN APPROACHING AND ENTERING CASTINE HARBOR.

I. ***From the Southward, through East Penobscot Bay.***—When nearly up with Parker's Cove a black spar-buoy (No. 3) will be seen off the Long Island shore. This is on Long Island Ledge, which has six feet at low water and lies about **SW.** $\frac{3}{4}$ **W.** from Dice's Head Light-house. The buoy is placed in thirty feet water on the eastern side of the ledge and must be left to the westward. (See page 204.) When past it, the course continues towards Cape Gellison until within a mile and an eighth of Dice's Head Light-house and just past Coombs' Point, when it turns again to the eastward, passing to the southward of a black spar-buoy, which is on *Otter Rock Shoal,* a ledge making off from the northern side of the entrance in a southerly direction about four hundred yards. The buoy is marked No. 1, placed on its southern end, and there is no passage inside of it.

Long Island Ledge.

Passing buoy No. 1 the course leads nearly towards a square, stone monument with a pole and cask on top. This is on Hosmer's Ledge, on the southern side of the channel, and between Nautilus and Hospital islands. The ledge is out at three-quarters ebb and is to be left to the southward. When abreast of it there will be seen to the northeastward, and about three-quarters of a mile off, a red spar-buoy, (No. 2.) This is on *The Middle Ground,* out at low water, and having the remains of a stone monument upon it. When up with this buoy you may anchor anywhere between it and the wharves; but wishing to proceed farther up, pass to the westward of it and steer towards another stone monument, surmounted by a spar and cask. This is on Trott's Rock, always out, and vessels must pass to the eastward of it. Above this it is not safe for strangers to go.

Hosmer's Ledge.

Trott's Rock.

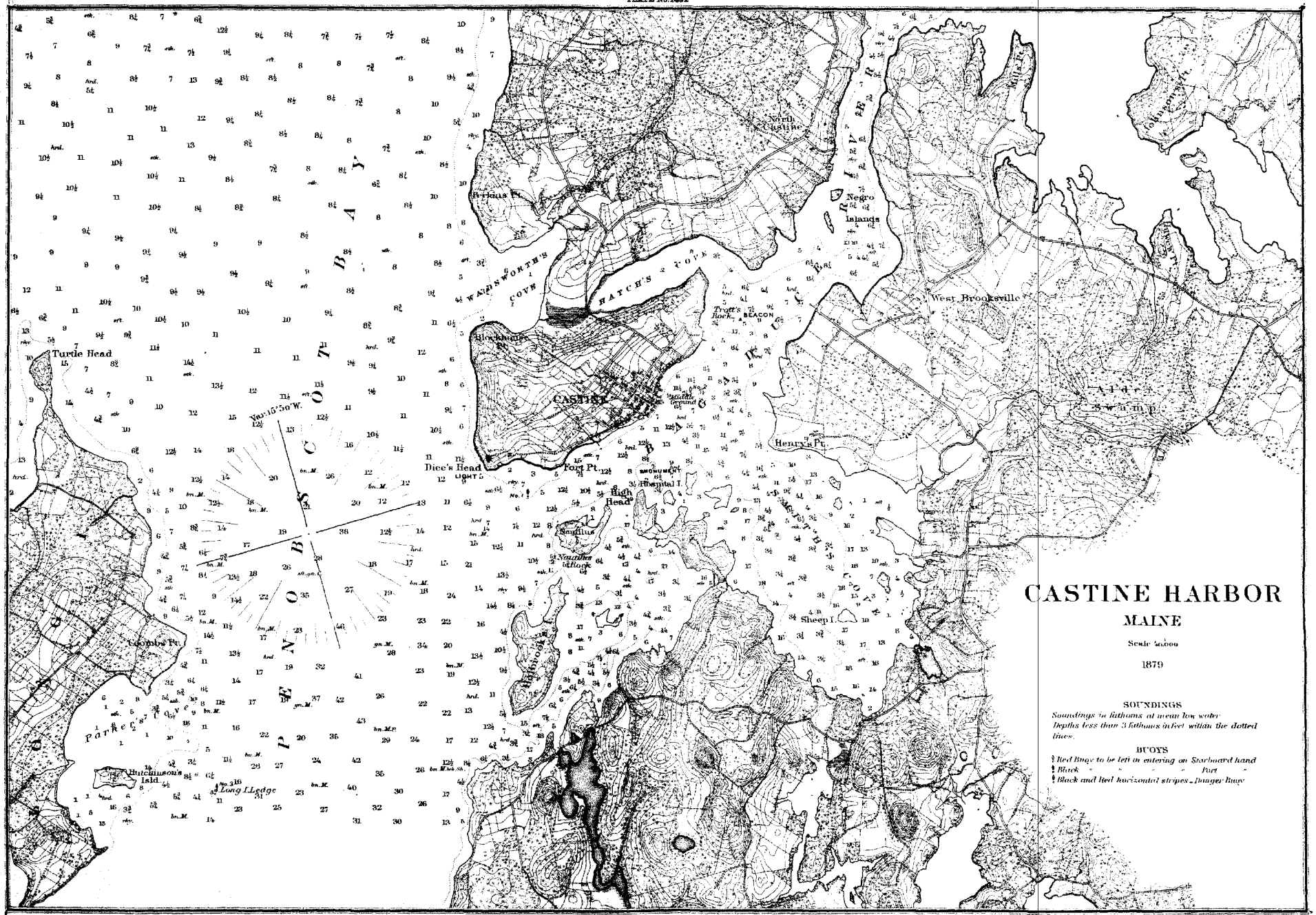
SAILING DIRECTIONS

FOR APPROACHING AND ENTERING CASTINE HARBOR.

I. ***From the Southward, through East Penobscot Bay.***—On the **N.** by **E.** $\frac{1}{4}$ **E.** course from off Western Island, when Dice's Head Light-house bears **NE.** by **E.** $\frac{3}{4}$ **E.**, distant a little over a mile and an eighth, and Turtle Head **NW.** $\frac{1}{4}$ **N.**, distant two miles and a quarter, steer **E.** $\frac{7}{8}$ **N.** between

PROOF FROM UNFINISHED PLATE

PLATE No. 1492



CASTINE HARBOR

MAINE

Scale 40,000

1879

SOUNDINGS

Soundings in fathoms at mean low water
Depths less than 3 fathoms in feet within the dotted lines.

BUOYS

Red Buoys to be left in entering on Starboard hand
Black " " " Port "
Black and Red horizontal stripes Danger Buoys

Dice's Head and Nautilus Island, passing six hundred yards to the southward of the former and an eighth of a mile to the northward of the latter. On this course you may anchor off Castine in from eighteen feet to thirteen fathoms; *but wishing to proceed farther up,* you may, when abreast of the stone monument on Hosmer's Ledge, (having it bearing **S.** $\frac{7}{8}$ **E.**, distant one hundred and fifty yards,) steer **NE.** $\frac{1}{4}$ **E.**, carrying not less than ten fathoms, until abreast of the red buoy on The Middle Ground. Pass one hundred and fifty yards to the westward of this buoy, and steer **E.** $\frac{7}{8}$ **N.** until the beacon on Trott's Rock bears **N.** by **W.** $\frac{3}{4}$ **W.**, when steer **NE.** $\frac{1}{8}$ **E.**, and anchor in from three to nine fathoms anywhere between the West Brooksville shore and the mouth of Hatch's Cove. Above this it is not safe for strangers to go. *Sailing Directions--Castine Harbor.*

The above courses pass three-quarters of a mile to the eastward of the black buoy on Long Island Ledge; six hundred yards to the southward of Dice's Head; nearly two hundred yards to the southward of the black buoy on Otter Rock Shoal; an eighth of a mile to the northward of Nautilus Island; one hundred and fifty yards to the northward of the monument on Hosmer's Ledge; the same distance to the northwestward of the red buoy on The Middle Ground; and four hundred yards to the southward of the beacon on Trott's Rock.

On the above courses, to enter Smith's Cove.—On the **E.** $\frac{7}{8}$ **N.** course, when past the monument on Hosmer's Ledge and the cove is fairly open, with Henry's Point bearing **SE.** $\frac{3}{8}$ **E.**, distant three-eighths of a mile, and the beacon on Trott's Rock **NE.** by **N.** $\frac{1}{4}$ **N.**, distant nearly five-eighths of a mile, steer **S SE.**, which will lead safely in, with not less than four fathoms, and up to the anchorage. This course passes a little over an eighth of a mile to the eastward of the fifteen feet spot on the western side of the entrance, and nearly two hundred yards to the eastward of *the two feet rock which lies a quarter of a mile from the western shore,* and half a mile **S.** by **W.** from Henry's Point. This dangerous rock should be marked by a spindle, as it is much in the way; and such mark will be recommended.

DANGERS

IN APPROACHING AND ENTERING CASTINE HARBOR.

II. ***From the Westward, by the passage to the northward of Long Island.***—Vessels bound from Belfast or Searsport to Castine pass to the northward of Long Island through an excellent channel, two miles wide, between Turtle Head and Sears' Island, (formerly known as Brigadier Island.) In this passage there are but two dangers,—one on the northern side, to the southwestward of Sears' Island, and the other off Turtle Head, on the southern side. The former is known as Brigadier Island Ledge, is bare two hours before low water, and extends off in a southwesterly direction from the southwestern point of Sears' Island about one-third of a mile. It is marked by a black spar-buoy (No. 1) placed in seventeen feet water on the southern end of the ledge. *Brigadier Island Ledge.*

The shoal off Turtle Head, *a detached ledge, with thirteen feet at low water,* lies one hundred yards to the northward of the head and is not buoyed. There is deep water between it and the head, but it is not advisable to try this passage.

When past the shoal off Turtle Head there are no more dangers until up with Otter Rock Shoal, at the entrance to Castine, which, along with the other dangers in the harbor, has already been described.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING CASTINE HARBOR.

II. ***From the Westward, by the passage to the northward of Long Island.***—Coming from Belfast, the course is **SE.** by **E.** $\frac{1}{2}$ **E.** until the northern extremity of Turtle Head bears **SW.** by **S.** $\frac{1}{2}$ **S.**, or is exactly abeam, distant a quarter of a mile. Dice's Head Light-house will now bear **SE.** by **E.**, and you may steer **SE.** by **S.** $\frac{3}{8}$ **S.** until the light-house bears **NE.** by **E.** $\frac{3}{8}$ **E.** and Turtle Head **NW.** $\frac{3}{4}$ **N.**, when the harbor is open, and **E.** $\frac{7}{8}$ **N.** will lead safely in, following the directions previously given. Or you may steer **SE.** by **E.** for Dice's Head Light-house until within four hundred yards of it, when round it to the southward, giving it a berth of not less than a quarter of a mile to avoid Otter Rock Shoal, and proceed as above directed. These courses pass about a mile and a half to the southward of Brigadier Island Ledge, and three hundred and fifty yards to the northward of the shoal off Turtle Head.

Sailing Directions--Castine Harbor. ***Having come from Searsport,*** the course is **S.** by **E.** $\frac{1}{8}$ **E. Nearly**, for Turtle Head, until abreast of the buoy on Brigadier Island Ledge, and Dice's Head Light-house bears **SE.** $\frac{1}{2}$ **S.** Now steer **S SE. Easterly**, which will lead safely up to the entrance; and when the light-house bears **NE.** by **E.** $\frac{3}{8}$ **E.**, about a mile and a quarter off, and Turtle Head **NW.** $\frac{3}{4}$ **N.**, as before, steer **E.** $\frac{7}{8}$ **N.**, and follow the directions for the harbor. This course passes three-eighths of a mile to the westward and southward of Brigadier Island Ledge, and half a mile to the eastward of Turtle Head.

Vessels having come down the Penobscot River and intending to enter Castine, must, when below Fort Point and approaching Dice's Head, be careful to give the eastern shore a berth of about five-eighths of a mile, as there is *a dangerous ledge, bare at low water*, making off to the northwestward for half a mile. This ledge is just to the northward of Steele's Head, which is about two miles and a half above Dice's Head. It is necessary to give it a wide berth, as it is not buoyed. A spindle will be recommended upon this ledge.

LIGHT-HOUSE.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Dice's Head Light-house	**44 22 57**	**68 49 9**	**4 35 16.6**	**Fixed.**	**130**	**17**

TIDES.

Corrected Establishment	**11h 10m**
Mean Rise and Fall of tides	**9. 3 ft.**
Mean Rise and Fall of Spring tides	**9. 8 ft.**
Mean Rise and Fall of Neap tides	**8. 8 ft.**
Mean duration of Rise	**6h 24m**
Mean duration of Fall	**6h 1m**
Rise of highest tide observed	**11. 8 ft.**

VARIATION OF THE COMPASS.

The magnetic variation for 1879 is 15° 44′ W., with an approximate annual increase of 2′.

WEST PENOBSCOT BAY.

which is contained between the Fox Islands and Long Island on the east and the mainland of White Head and Belfast on the west, is the entrance commonly used by vessels coming from the westward. There are several channels leading into it, the most commonly used of which is the Muscle Ridge Channel, beginning at White Head, and terminating at Owl's Head, about seven miles and a half above. The main entrance to the bay is between Matinicus Island and the Green Islands, which are about five miles to the northwestward of it. There are, however, other passages,—one between Matinicus and Wooden Ball islands; another between Wooden Ball and Matinicus Seal islands; and still another between Seal Island and Saddle-back Ledge. Of these, the main channel is that between Matinicus Island and the Green Islands,—the others not being recommended to strangers.

Heron Neck Light-house. From Matinicus Island to Heron Neck Island, at the southwestern extremity of the Fox Islands, the distance is nine miles; and this point is, properly, the eastern point of entrance to West Penobscot Bay. Heron Neck Light-house, the eastern guide to the bay, is on the southwestern end of Green Island, which lies close to the western shore of Vinal Haven and near its southern end. The light-house is a brick tower, whitewashed, and twenty-four feet high, which shows a fixed red light, of the fifth order of Fresnel, from a height of ninety-two feet above the sea, visible fourteen miles. The keeper's dwelling, to which it is attached, is also of brick, whitewashed. The geographical position of this light is

Latitude ..... **44° 1′ 30″ N.**
Longitude ..... **68° 51′ 42″ W.**

and, besides its use for entering the bay, it is a local guide to Carver's Harbor and Hurricane Sound.

Green Island. Green Island, sometimes called **Heron Neck Island**, is of irregular shape, lies nearly **N.** and **S.**, and is about a mile and a half long, of moderate height and for the most part wooded, though there are occasional houses and cleared fields. It is separated from Vinal Haven by a passage two hundred and fifty yards wide in its narrowest part, but full of ledges and entirely unsafe. On the southern side of the island there is a cove, about three-eighths of a mile in length, called **Deep Cove**, making in on the eastern side of **Heron Neck**, (the southwestern end of Green Island,) between it and the southeastern point of the island. In this cove four fathoms can be found at low water, and it affords good shelter in northerly winds.

White Head Island and Light-house.

The western point of entrance to West Penobscot Bay, as before described on page 190, is formed by White Head Island, a rocky island lying close in with the western shore, about eight hundred yards long NW. and SE., and wooded principally with stunted spruce and fir. From Saddle-back Ledge Light-house it bears W. ¼ N., about seventeen miles distant. White Head Light-house is built on the western end of the island, half-way up the slope of **White Head**, and is a granite tower, unpainted, thirty-four feet high, and shows a fixed white light, of the third order of Fresnel, from a height of seventy-nine feet above the sea, visible fourteen miles. The tower is connected with a one-story dwelling-house, whitewashed. Its geographical position is

Latitude	43° 58′ 42″ N.
Longitude	69° 7′ 28″ W.

Fog-signal.

A ten-inch steam fog-whistle (in duplicate) has been established at this light-house, which during a fog gives blasts of eight seconds at intervals of fifty-two seconds.

The following are the bearings and distances of White Head Light-house from prominent points on the coast: From

	Miles.
Saddle-back Ledge Light-house, W. ¼ N	17
Mount Desert Rock Light-house, W. by N. ¼ N	43
Matinicus Rock Light-houses, NW. by N. ¼ N	17
Monhegan Light-house, NE. ¼ E	15½
Cape Ann Light-houses, NE. by E. Northerly	105
Highland Light-house, (Cape Cod,) NE. ¾ N	125

White Head is also the western point of entrance to Muscle Ridge Channel.

Green Islands.

Of the outlying islands off Penobscot Bay, Matinicus, Wooden Ball, Matinicus Seal Island, Ragged Island and Matinicus Rock have been already described on pages 191–192. Five miles NW. ¼ W. from Matinicus Island, and on the western side of the main channel, is **Outer Green Island**, about half a mile long N. and S., with an average width of a quarter of a mile. It is low and grassy, with somewhat steep faces, and has a group of houses on its northern end. There are dangerous ledges about five-eighths of a mile to the southeastward of this island, known as **Outer Green Island** or **Seal Ledges**. About a mile to the northwestward lies **Little Green Island**, three-eighths of a mile in diameter, low, bare of trees and grassy—with an unobstructed passage between the two through which thirteen fathoms may be taken. Outer Green Island is nine and a half miles SW. by W. from Heron Neck Light-house, nearly ten miles NW. by N. ¼ N. from Matinicus Rock Light-houses, and six and a half miles SE. by S. from White Head Light-house.

Metinic Island.

Four miles and a half to the westward of the Green Islands lies Metinic Island, (its centre bearing nearly due W. from Outer Green Island,) with a good passage between them—obstructed, however, by **The Southern Triangles**. It lies about nine miles and a half to the westward of Matinicus and about the same distance E NE. from Monhegan, extends N NE. and S SW., and is nearly two miles long, with an average width of a quarter of a mile. Its northern end is bare of trees and the summit dotted with scattered houses. The middle of the island is thickly wooded, while the southern end is low, bare of trees, and has a few houses on it. Near its southern end, and about six hundred yards to the eastward of it, is a small island, called **Hog Island**; and an eighth of a mile NE. from this another and much smaller one, called **The Knubble**. Both are surrounded by shoals, and there is no safe passage between them and Metinic. On the western side of the latter, about five-eighths of a mile from it, lies a bare rocky islet called **Black Rock**. It is bold-to and may be safely passed on either hand, as there is equally good water on both sides. The northern end of Metinic Island bears from White Head Light-house S. by W. ¼ W., distant five miles.

Metinic Green Island.

Three-eighths of a mile S SW. from the southern end of Metinic lies a low, grassy islet, called Metinic Green Island. It is about two hundred and fifty yards in diameter, and its shores are foul; but there is a passage, with three and three-quarter fathoms, between it and Metinic Island by keeping within one hundred and seventy-five yards of the former. This passage is, however, unfit for strangers, and is very little used by any one on account of the dangerous ledges which extend to the southward from the southern end of Metinic to a distance of a quarter of a mile.

Monhegan Island.

Monhegan Island, the westernmost of the outlying islands off Penobscot Bay, does not belong properly to the bay; but, as it is the usual land-fall made by vessels from the westward, it is proper to describe it here. It is situated in

Latitude	43° 46′ N.
Longitude	69° 18′ W.,

and is distant from Cape Ann (Thatcher's Island) about eighty-four miles on a NE. ¼ E. course; from Seguin nineteen miles on an E. course; and from Matinicus Rock Light-houses about twenty-one miles on a W. by N. course. Monhegan lies NE. and SW., and is a mile and a half long, high, with steeply sloping shores, and quite bold-to. Its northeastern end, called **Green Point**, is high and wooded; and a little to the southward of this, on the eastern face of the island, is a bluff, precipitous head, called **Black Head**. Thence the surface gradually descends towards the southwestern end, which is low and thickly wooded and is known as **Lobster Point**.

Monhegan Light-house. About the middle of Monhegan Island, on a bare summit a hundred and forty feet high, is built the light-house, called Monhegan Light-house, a grey stone tower, thirty-six feet high, connected with the keeper's dwelling by a white porch, and showing a revolving white light, of the second order of Fresnel, from a height of one hundred and seventy-five feet above the sea. The light revolves at intervals of one minute, and should be visible from a vessel's deck, on a clear night, nineteen miles. It is usual to look for it immediately after passing Seguin. The geographical position of Monhegan Light-house is

Latitude ..... **43° 45′ 52″ N.**
Longitude ..... **69° 18′ 57″ W.**

Manana Island and Fog-signal. Close in with the western shore of Monhegan, about two hundred yards off, lies a small bare island, called Manana Island. It is about three-eighths of a mile long **N NE.** and **S SW.**, and is bare of all vegetation except grass. Upon it is situated the fog-signal for the western approach to Penobscot Bay, a first-class Daboll trumpet, (in duplicate,) placed in a high building adjoining the keeper's dwelling, and giving blasts of fifteen seconds at intervals of forty seconds. A bell is rung in case of necessity. The geographical position of the fog-whistle is

Latitude ..... **43° 45′ 46″ N.**
Longitude ..... **69° 19′ 36″ W.**

Monhegan Harbor. Between the northern end of Manana and the western face of Monhegan are two bare islets, which form, with Manana and Monhegan, a small harbor of refuge, called Monhegan Harbor. It has from sixteen feet to seven fathoms in it, and there are no dangers; but it is open to the southward. From northerly, easterly, and westerly winds it is well protected.

About a quarter of a mile to the northeastward of Manana, and two hundred yards from the western shore of Monhegan, lies a small bare island, called **Inner Duck Rock**; and on the northern side of this islet makes in what is known as **Deadman's Cove**, in which anchorage may be found in from two to seven fathoms, in fine weather or with easterly winds.

The eastern shores of West Penobscot Bay begin, as before remarked, with the Fox Islands and the numerous islands and islets scattered along their western and southern faces. Of these Brimstone, Otter, Roberts', Hay, and Carver's islands have been already described in the approaches to East Penobscot Bay (see page 194) and Green Island, on page 220. The western shore of Vinal Haven Island is very irregular in outline,—being indented by numerous coves,

Carver's Harbor. off which lie many islets and rocks,—and is totally unfit for strangers to approach. Of these coves the southernmost is known as Carver's Harbor, formed by a cove of irregular shape, which penetrates the southwestern shore of the island in a **N NE.** and **S SW.** direction, and is about five-eighths of a mile long. It is not a very good harbor under any circumstances, and the approach to it is so obstructed by ledges and sunken rocks (few of which are buoyed) that strangers are not advised to attempt to enter it unless compelled by necessity. There is a small settlement here, occupying both shores of the cove, and the principal industry is fishing and the working of stone-quarries in the neighborhood. The land in this vicinity is for the most part barren and rocky, with an occasional sickly growth of fir and spruce, and the approaches present a peculiarly forbidding appearance.

Hurricane Island. Five-eighths of a mile to the westward of the northern end of Green Island lies Hurricane Island; and between the two is the entrance to Hurricane Sound from the southward. The island is a little over half a mile long **N.** and **S.**, rocky, and dotted here and there with a thin growth of fir and spruce. Its surface is undulating, but highest in the middle, where it rises to a sort of peak one hundred and sixty feet high, somewhat steeper on the eastern than on the western side.

Off the southern end of Hurricane Island extends to the southward a mass of ledges and bare rocks to the distance of three quarters of a mile, called Deadman's Ledges, the largest and most prominent of which is half a mile to the eastward of Heron Neck Light-house,—this being the width of the channel. A quarter of a mile to the southward of this the

Deadman's Ledges. ledges extend, terminating in a very dangerous rock, bare at low water, and called **James and Willie's Ledge.** It is marked by a black spar-buoy as a guide to Hurricane Sound, and always shows itself by breakers. From Deadman's Ledges a line of ledges, bare rocks and rocky islets extends about **N.** by **W.** for a little over a mile,—the northernmost being abreast of the middle of Hurricane Island. The main channel into Carver's Harbor passes between these ledges and Green Island with an average width of about seven hundred yards and a depth of from twelve to twenty-four fathoms. There is also a deep channel between them and Hurricane Island, through which not less than four and a half fathoms at low water is found, but it is entirely unsafe without a local pilot.

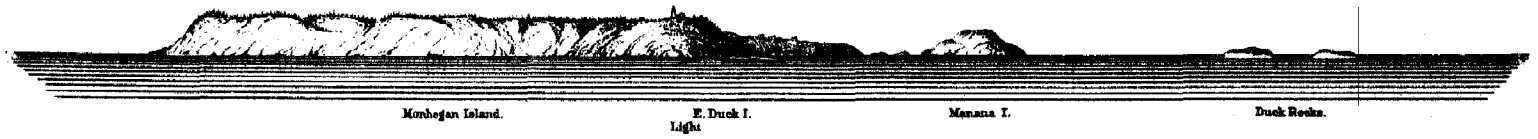
Little Hurricane Island. Little Hurricane Island lies about three-eighths of a mile to the westward of Hurricane Island. It is about three hundred yards long, bare of trees (except one or two at the northern end) and surrounded by very dangerous ledges. The passage between it and Hurricane Island is so full of ledges and bare rocks that it cannot be entered without a pilot.

Little Hurricane Island is on the southern side of the western entrance to Hurricane Sound; while on the northern side of the same entrance lie the White Islands,—a group of nine rocky islets, lying **E NE.** and **W SW.** from each other, of moderate height, and dotted with a very few scrubby fir. One or two of them have houses, but for the most part they are barren and rocky.

White Islands. These islands are in two clusters, separated by a wide and nearly unobstructed passage with from eight to seventeen fathoms in it. The southernmost group is composed of four, lying in a line nearly **N.** and **S.**, with no safe passage between them. The southernmost, which is five-eighths of a mile **E.** by **W.** ½ **W.** from Little



Monhegan Island from the Eastward, Light bearing W.N.W. distant 4 Miles.



View of Monhegan Island from Muscongus Bay, Light bearing S.W. by S. distant 3½ Miles.

Hurricane Island, is also the westernmost of the islets off Vinal Haven, and marks the eastern limits of the bay channel at this point. It is four hundred yards long N. and S., sixty feet high, somewhat steep, bare on the summit, but fringed near the shore with scrubby spruce and fir. A bare rock, three hundred and fifty yards to the westward of its northern end, is connected with it at low water. One hundred and fifty yards to the eastward of this island is another and much smaller one, twenty feet high, nearly bare, but having a few trees on its western side. An eighth of a mile to the northward of this is the third of the group,—low, flat, and bare except for a very few spruce scattered along its northern and western faces. This is joined at low water by a line of ledges to the northernmost and largest of the lower group, which is nearly a quarter of a mile long N. and S., fifty feet high, and thinly wooded with a scrubby growth of fir and spruce. There are a few houses on its southern end. A quarter of a mile to the eastward of this island lies the westernmost of the second group, with a good channel with thirteen fathoms between them. It is in reality two islets joined by a shingly bar, and is low, flat and thinly wooded. Two hundred yards to the northward of this is another islet, from twenty to fifty feet high, five hundred yards long and lowest in the middle, where also it is wooded,—the northern half being bare of trees. Dangerous ledges lie on its western and southern sides; but its eastern side is bold-to,—five fathoms being found between it and the islet to the eastward of it. Of this northeastern group the southernmost is in reality two islets, connected at low water and also joined to the large island off their northern end. The northern islet is thirty feet high and thinly wooded; the other is but ten feet high; and both have dangerous ledges lying off their southern end. The southernmost islet is five-eighths of a mile to the northward of Hurricane Island and nearly half a mile to the eastward of the southwestern group,—the western entrance to Hurricane Sound passing between them with not less than eight fathoms. The large island to the northward of these, which is the largest of the group, lies nearly N. by E. and S. by W., is about half a mile long, varying in height from forty to sixty feet, (the latter at its southern end,) and is for the most part wooded. One hundred and fifty yards to the westward of its northern end, and separated from it by a passage full of ledges, lies the northernmost of the group,—very irregular in shape, about an eighth of a mile in diameter E. and W., low on its eastern side, but rising to forty feet at its western end, where it is thinly wooded. All of these islands are dangerous of approach, and strangers must not come near them.

Description of West Penobscot Bay.

The passage between the Vinal Haven shore and Green Island is locally known as **The Reach**, and leads into Hurricane Sound,—the name given to that body of water included between Green Island and Vinal Haven Island on the east, and Hurricane Island, the White Islands, and Leadbetter's Island on the west. It runs in a N. and S. direction, and has deep water in it; but it is obstructed by many ledges and sunken rocks, and is not recommended to strangers. There are two entrances to this Sound,—the main channel, which leads between Green Island on the east and Hurricane Island on the west; and the western channel, which leads between the White Islands on the north and Hurricane Island on the south. Both are good, but the western channel is the best,—being the easier of access for strangers, and having most of the ledges buoyed. Many other passages lead into this Sound from the bay, in all of which there is water sufficient for the largest vessels; but their navigation is impossible for strangers on account, in some cases, of their contracted limits, winding courses, and strong currents, and in others of the numerous ledges obstructing them, which are not buoyed.

Hurricane Sound.

Green Island, before described, lies on the eastern side of the main entrance to the Sound; and Heron Neck Light-house, on its western end, is the guide to the Sound as well as to Carver's Harbor. At the northern end of The Reach is a shallow cove, called **Old Harbor**, affording comfortable anchorage for small vessels in from nine to fifteen feet; and next to the northward of this, shut in from all winds by the shores of Vinal Haven on the north, east and south, and by **Barton's Island** on the west, lies a large and commodious cove called The Basin. This well sheltered harbor has very deep water in it,—the depths varying from four to eighteen fathoms; but it cannot be entered except at high water,—being barred both at its northern and southern entrances.

The Basin.

Just to the northward of the White Islands, from which they are separated by a passage three hundred yards wide, lie two rocky islets connected at low water. The southernmost, called Lairey's Island, is about four hundred yards long, and has one or two fir trees upon it. The northernmost, called Pole Island, is six hundred yards long, and much higher than the other,—rising to a height of eighty feet at its summit. It has a very few scattered spruce upon it and one house on its eastern end. There is a passage, with six fathoms at low water, leading to the westward, between this and Leadbetter's Island, called **Lairey's Narrows**; and another, much narrower, with three and a half fathoms, leading between these islands and the White Islands; but neither is fit for strangers, although the former is buoyed.

Lairey's and Pole Islands.

The passage from Hurricane Sound to the northward leads into Leadbetter's Narrows, along the northern shore of Leadbetter's Island, and thence between Dogfish Island and Crockett's Point into West Penobscot Bay. No intelligible description can be given of the dangers in Hurricane Sound and its various passages, and it should not be attempted by strangers,—the fishermen only who live upon its shores being sufficiently conversant with its dangers to act as pilots.

Leadbetter's Island lies on the northern side of Lairey's Narrows, four hundred yards to the northward of Lairey's and Pole islands and three quarters of a mile to the westward of Barton's Island. It lies nearly N. and S., is triangular in shape, a mile long, undulating,—the heights varying from twenty to one hundred feet,—and for the most part thickly wooded, although the eastern and northern slopes are comparatively bare of trees. The highest land on the island is at its northwestern end, where there is a steep, wooded hill one hundred feet high. There are several houses on its northeastern end, near the shore. **Leadbetter's Narrows** lead along the northern shore of the island, between it and the Vinal Haven shore, and four fathoms may be carried through them,—the passage being in no place less than one hundred yards wide.

Leadbetter's Island.

Long Cove, a narrow indentation seven-eighths of a mile long and varying in width from one hundred to four hundred yards, makes into the western shore of Vinal Haven in a **NE.** by **N.** direction, and affords good anchorage in from five feet to four fathoms. Its entrance is seven-eighths of a mile above the northern entrance to The Basin, and is obstructed by several islets and kelp ledges. Its shores are high, steep and for the most part thickly wooded, although there are a few small clearings and houses here and there. It is not fit for strangers, however, and is not even seen by vessels passing up and down the bay.

Long Cove.

About six hundred yards to the northwestward of the northwestern end of Leadbetter's Island, and off the mouth of Crockett's Cove, lies Dogfish Island, somewhat triangular in shape, a quarter of a mile long **N NE.** and **S SW.**, seventy feet high, bare in the centre, and having a few trees at its northern and southern ends. On its eastern side is a good channel leading from the bay into Leadbetter's Narrows, through which five fathoms may be taken; but on its western side strangers must give it a wide berth on account of the dangerous **Dogfish Ledges**, which lie off the island to the westward and northwestward, extending in some places to a distance of seven-eighths of a mile. Although there is good water among these rocks the channels, in the absence of marks, are too narrow and intricate for strangers to attempt them.

Dogfish Island.

Three-quarters of a mile to the southward of Dogfish Island and nearly half a mile to the westward of the hill on the northwestern end of Leadbetter's Island, lies Green Island, low, flat, bare of trees, and about one hundred yards in diameter. Dangerous ledges make off from it to the northward about a third of a mile and to the northwestward nearly a quarter of a mile; but there is a deep channel (not less than three and a quarter fathoms) on its eastern side, between it and Leadbetter's Island, and another on its southern side, between it and **Green Ledge**, nearly half a mile to the southwestward. This ledge is composed of two bare, rocky islets, joined at half-tide by ledges lying east and west from each other,—the westernmost being distant from Pole Island about seven-eighths of a mile in a **W.** by **N.** $\frac{1}{2}$ **N.** direction. On its southern side a great mass of ledges and sunken rocks extend nearly to the southern group of the White Islands, a distance of more than half a mile; and no one should attempt to pass through without an experienced local pilot. **Medric Rock**, a small, bare rock, lies nearly half a mile to the westward of Green Ledge; and about the same distance to the northward of this lies a half-tide rock, with long ledges, making to the northward from it. **Inner Bay Ledges** complete the group,—lying a mile and three-eighths to the westward of Green Ledge and a mile and three-quarters to the westward of Dogfish Island.

Green Island.

Crockett's Cove, which makes into the western shore of Vinal Haven just above Leadbetter's Narrows and just to the eastward of the entrance to Fox Islands Thoroughfare, is a narrow cove nearly a mile long, running about **NE.** by **N.**, and terminating in a shallow pond just back of Brown's Head. Dogfish Island lies off the mouth of this cove at a distance of a quarter of a mile, with a channel on either side of it; but the entrance is obstructed by a dangerous ledge, out at half-tide, lying in the mouth of the cove, and extending in a **NW.** and **SE.** direction nearly three hundred yards. The shores of the cove are high, steep and for the most part thickly wooded, and anchorage may be found in from six feet to four fathoms.

Crockett's Cove.

Crockett's Point. Crockett's Point, the western point of entrance to Crockett's Cove and the eastern point of the western entrance to Fox Islands Thoroughfare, is rocky, gently sloping, from twenty to forty feet high, and covered only with a scanty growth of grass. (See also page 210.) Opposite to it, in a **NW.** by **N.** direction and a little over a mile and a quarter distant, lies Crabtree Point,—the southwestern extremity of North Haven and the western point of entrance to the Thoroughfare. It is low, level and rocky, covered with a scanty growth of grass, and has two spruce trees standing close together, some distance back from its southern end. Its western end is commonly known as **Stand-in Point.** Many dangerous ledges and bare rocks lie to the southward and southwestward of the point, principal among which are **Fiddler's Ledge**, surmounted by a stone beacon, and **Drunkard's Ledge**, marked by an iron spindle. This point is also the eastern point of the southern entrance to the Middle Passage.

Crabtree Point.

The western shore of West Penobscot Bay, between White Head and Owl's Head, is formed by the mainland of the township of Thomaston, but is shut off from the principal approach by a great number of islands and islets separating the main channel from the Muscle Ridge Channel, and to which the name **Muscle Ridge Islands** has been given. White Head Island has already been described on page 221. Of the Muscle Ridge Islands, the first met with by a vessel coming in by the main channel will be the Two-Bush Islands, known, respectively, as **Two-Bush** and **Little Two-Bush.** They are the southernmost of the group, and lie three miles and a quarter **N.** by **W.** from Little Green Island, with a wide channel, called **Two-Bush Channel**, between, through which from ten to twenty fathoms can be taken. Great Two-Bush is the easternmost, and is bare, rocky, forty feet high, about four hundred yards long, and lies nearly **E.** and **W.** At low water a long dry reef extends from it in an **E NE.** direction to a distance of over five hundred yards. Little Two-Bush Island is merely a bare rock, about one hundred yards square and thirty feet high, lying two hundred and fifty yards **W NW.** from the southern end of Great Two-Bush. At low water it is surrounded by a dry reef and connected with the larger island. These two islands give the name to Two-Bush Channel.

Two-Bush Islands.

Next to the northwestward of Two-Bush Islands and four hundred yards off lies **Crow Island**, a small rocky island, with a few scattered fir trees upon it, and between five and six hundred yards long and forty feet high, with a somewhat precipitous face. There is no safe passage between it and the Two-Bush Islands. Nearly six hundred yards **N NE.** from it lies a much larger island, called **Pleasant Island.** It is of irregular shape, lies nearly two miles to the eastward of White Head Light-house and half a mile to the northward of Great Two-Bush. Near its

Pleasant Island.

southern end it is nearly divided by a deep cove which makes in from the eastward, contracting it to a strip of land which at high water is only fifty yards wide and about six feet above sea-level, and connects the northern with the southern part of the island, which is forty feet high, with precipitous faces. There are a few trees on a hillock at the northern end of the island, and the crest and southern end are wooded with spruce, pine and birch, but near the middle the land is cleared and has one or two houses upon it. A small wooded islet lies off the northern end of the island, on its western side.

Home Harbor. On the northern side of Pleasant Island is formed a harbor of refuge known as Home Harbor, affording anchorage in from three and a half to six fathoms, and fully protected from all winds except those between **SE.** and **E.** Its boundaries are Hewell's Island on the north and northeast, Pleasant Island on the south, Bar Island on the west, and Flag Island on the northwest.

Grafton Island. Grafton Island lies about three-eighths of a mile to the westward of Pleasant Island, and is the westernmost of the larger islands of this group. It lies **E NE.** and **W SW.**, is half a mile long, has an average width of three hundred and fifty yards, and with a gradual rise attains a height of sixty feet near its centre. Its northern, eastern and southern ends are thickly wooded, leaving a cleared patch of grass-land on the western side, near the middle. Between this island and Hewell's Island lie two islets, known as **Flag Island** and **Bar Island.** The latter, which is connected with Grafton Island at low water and lies about one hundred yards to the eastward of its northern end, is a low, rocky islet lying **N.** and **S.**, about four hundred yards long, with a few trees at its ends but a bare summit. The former is an eighth of a mile to the eastward of Bar Island and two hundred yards to the westward of Hewell's Island. It is of irregular shape, an eighth of a mile long, quite low, and has a few trees upon it. There is no safe passage among these islets.

Hewell's Island. About four hundred yards **N NE.** from Pleasant Island is Hewell's Island, lying **NE.** and **SW.**, three-quarters of a mile long, and of very irregular shape,—both shores being indented by long coves. At its northeastern end it is sixty feet high, with the crest covered with a sparse growth of fir, from which it descends gently and regularly towards the middle of the island, where two coves, making in from the eastward and westward, nearly separate it into two parts;—and here the land is barely elevated above high-water mark. The southwestern end is eighty feet high, partly wooded with spruce and birch; while the southeastern end is very similar in appearance, but not quite so high. Between these two heads runs a low, narrow neck of land, separating the heads of two coves, which approach each other from the eastward and westward. Thus viewed from the eastward or westward, Hewell's Island presents the appearance of three distinct hills, like three islands separated by narrow passages.

From the northern extremity of Hewell's Island extends a long line of rocks,—some bare at high water, some covered, and others elevated twenty feet above the sea. These are the **Clam Ledges,** which extend off nearly a mile to the westward and occupy all the area between Hewell's and Dix islands.

Andrews' Island. To the northeastward of Hewell's Island, and distant from it about six hundred yards, will be seen a large island of moderate height, and for the most part covered with a mixed growth of trees. This is Andrews' Island, the largest as well as the most easterly of the Muscle Ridge group, lying **NE.** and **SW.**, three-quarters of a mile long, and with an average width of a quarter of a mile. Seen from the eastward or westward it will present an undulating and irregular outline, which, together with its size and peculiar growth of trees, will serve to distinguish it from any other of this group. The surface is partly grassy and in places cultivated, but a large portion of the island is covered with a mixed growth of trees. At its northeastern end the land rises to a height of over eighty feet, then gently descends towards the middle of the island, where the height is only twenty feet, which elevation it maintains to its southern end, where are two hillocks sixty feet high,—one on the southeastern and the other on the southwestern face. There are a few houses on the northeastern and southwestern ends.

On its northwestern side Andrews' Island is connected at low water with a rocky island, about seven hundred yards long and twenty-five feet high, which is called **The Neck.** It lies **NE.** and **SW.**, and has a few scattered fir trees upon it.

Camp and Pond Islands. About an eighth of a mile from the northern shore of Andrews' Island lies Camp Island, a low, rocky islet about one hundred yards in diameter, and bare of all trees except a single spruce on its summit. One hundred and fifty yards to the westward of it, and an eighth of a mile to the northward of Andrews' Island, lies Pond Island, about two hundred yards in diameter, between forty and fifty feet high, rocky, and covered with spruce and fir scattered in groups over its surfaces. There is no passage between it and Camp Island, nor between these two and Andrews' Island,—the whole area being studded with rocks and ledges. An eighth of a mile to the northward of Pond Island is **Little Pond Island,** somewhat oval in shape, an eighth of a mile long, between twenty and thirty feet high, and for the most part barren; but there are a few small trees near its summit. None of these islands can be safely approached on account of the dangerous ledges surrounding them; and the last-mentioned must receive a berth to the westward of not less than a mile on account of outlying rocks which are not buoyed.

Crescent Island. Five-eighths of a mile **NE.** by **E.** ½ **E.** from Little Pond Island, and a little over a mile to the northward of Andrews' Island, lies a low, level, rocky islet, about two hundred yards long **N NE.** and **S SW.**, called Crescent Island. It has steep faces about ten feet high, is bare of trees except two small spruce or fir trees, (one at each end,) and is bold-to on all sides,—ten fathoms being found within fifty yards of its eastern side and nine fathoms within one hundred yards of its southern end. A wide and deep passage leads between this islet and Fisherman's Island into Muscle Ridge Channel.

About three-eighths of a mile to the northwestward of The Neck of Andrew's Island, and easily recognized by its thickly-clustered houses, with tall derricks and other machinery of stone-quarries, lies Dix Island, the site of one of the most important granite works on the Atlantic coast. It is first distinctly seen through the opening between Hewell's and Andrews' islands, and is the most noticeable of all the landmarks in this vicinity, especially to a stranger, who cannot fail to recognize it. The island is very irregular in shape, and is about twelve hundred yards to the northward of Hewell's Island and about seven hundred yards to the northwestward of The Neck of Andrews' Island. It lies N. by E. and S. by W., is seven hundred yards long, sixty feet high, and destitute of trees except a small clump of firs here and there, and almost entirely covered with houses and stone-sheds. A narrow and crooked channel exists between this island and Andrews' Island, through which over three fathoms at low water may be carried into a sort of harbor contained between Dix, High, Andrews' and Hewell's islands, and called Dix Island Harbor. It affords comparatively good shelter, and is often used by vessels loading at Dix Island with the granite for which that place is famous.

Dix Island.

Dix Island Harbor.

Between Andrews' and Dix islands, but only one hundred and fifty yards from the latter, lies a small island known as Birch Island. It is five hundred yards NW. by N. from The Neck, lies W NW. and E SE., and is a little over three hundred yards long. It rises abruptly from the water to a height of twenty feet, the surface level (except at the western end, where there is a slight elevation) and bare except for a few spruce trees at its eastern extremity. From its southwestern end a long and narrow tongue of land extends to the southward one hundred and twenty-five yards, with two or three spruce trees on its summit.

Birch Island.

High Island is a little over five hundred yards to the eastward of Dix Island, and is not usually seen by vessels coming through the main channel until they are to the northward of Andrews' Island, when it will appear well to the westward as a rocky island with its top fringed with fir trees and a few scattered trees on its eastern and western ends. It lies NW. and SE., and is seven hundred yards long and seventy feet high. Between this island on the east and Little Green Island on the west is a good channel, with from four to five fathoms, leading directly up to the northeastern end of Dix Island, and thence along its eastern face with from nine to eleven feet.

High Island.

Little Green Island lies four hundred yards N NE. from Dix Island and three hundred yards NW. ½ W. from High Island. It is low, rocky and bare, and about three hundred yards long E. and W. Between it and Otter Island, three hundred yards N. by W. from it, there is a passage with four fathoms at low water. Otter Island lies NW. and SE., and is nearly five hundred yards long and about fifty feet high. From Dix Island it bears N. by E. ½ E., distant half a mile, and from Fisherman's Island W SW., distant one mile and three-quarters. Its eastern end is partly wooded with spruce and fir, while the western end is bare, or covered with the rough grass so commonly found on the islands in this vicinity. Between Otter Island and Ash Island runs the main channel through the Muscle Ridges with twelve fathoms water.

Little Green and Otter Islands.

Fisherman's Island.

One mile N. ¾ E. from Crescent Island, a mile and three-quarters E NE. from Otter Island, and about a mile and an eighth to the eastward of Ash Island, lies Fisherman's Island. It is of irregular shape, rocky, lies NE. and SW., and is about three hundred and seventy-five yards long. A few stunted fir trees are scattered along the northern and eastern faces and on the summit, but both ends are bare. This island forms the southern boundary of **Fisherman's Island Passage**, which is nearly a mile wide, and leads from Muscle Ridge Channel into the bay with not less than five fathoms at mean low water.

A quarter of a mile SW. from Fisherman's Island lies **Marblehead Island**, small, rocky and bare of trees. It lies N NE. and S SW., is one hundred yards long and forty-five feet high, with steeply sloping shores. Between this and Fisherman's Island there is a channel four hundred yards wide with six fathoms water.

About a mile and a quarter to the westward of Fisherman's Island and a quarter of a mile from the main shore lies Ash Island, on the western side of Muscle Ridge Channel, but plainly visible from the bay. It is nearly a quarter of a mile long NE. and SW., and about sixty feet high at its highest point, which is near the northeastern end. Its southwestern end is rocky and wooded with the usual growth of stunted trees. There is no safe passage inshore of it. On the southeastern end is built a large tripod, with its legs painted white, and covered in from the top twenty-four feet down,—the covered part being painted brown.

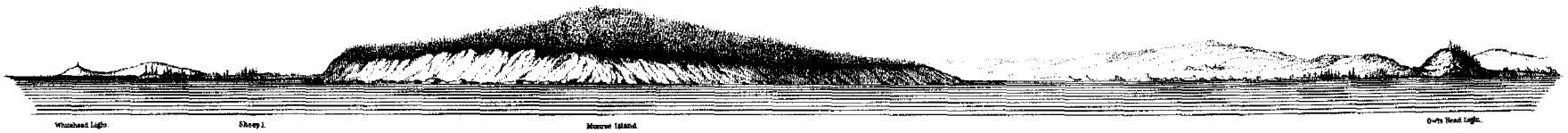
Ash Island.

On the northern side of Fisherman's Island Passage, and nearly a mile and a quarter N. ¼ W. from Fisherman's Island, is Sheep Island, on the eastern side of Muscle Ridge Channel. It is also a mile and a half to the northeastward of Ash Island, and forms the eastern point of entrance to **Owl's Head Bay**, which is the name given to the northern portion of the Muscle Ridge Channel. Sheep Island is half a mile long and not quite a quarter of a mile wide, lies N NE. and S SW., and shows a grove of tall pines at its southwestern point,—the rest of the southern part being wooded with a stunted growth of spruce. It is low and sandy, with water-worn faces, and the northern half is cleared with the exception of an occasional solitary tree. It is not safe to approach, as it is surrounded by dangerous shoals. **Cutter's Knubble**, a bare rock about seventy-five yards in diameter, lies an eighth of a mile to the eastward of its southern end and is joined to it at low water.

Sheep Island.

Munroe Island.

Munroe Island, the northernmost of the Muscle Ridge group, lies about three-eighths of a mile to the northeastward of Sheep Island and about the same distance to the southeastward of Owl's Head. It is rocky and well wooded, (principally with fir trees,) lies N. by E. and S. by W., is three-quarters of a mile long, and at its highest



View from Whitehead Light to Owl's Head Light, Owl's Hd. Lt. bearing Wby N. distant 11 Miles

Rhe Graphic Co. N.Y.

point, which is on its eastern side, is one hundred and twenty feet high, with steeply-sloping shores. Its southern end is cleared and has one or two houses on it.

The western shore of Penobscot Bay abreast of the Muscle Ridge Islands is very irregular in outline,—being much cut up by coves and small streams,—and is for the most part barren, rocky and densely wooded There are, however, small settlements at intervals near the shore, and in a few instances cleared and cultivated fields This shore is not clearly seen by vessels coming up the bay through the main channel, but only by those using the Muscle Ridge Channel.

Seal Harbor.

On the northern side of White Head makes in what is known as Seal Harbor, a bay of irregular shape contained between White Head Island on the south, Spruce Head Island on the north, and Norton's and Rackliff's islands on the west and northwest,—thus forming a broad cove about a mile long and a little over three-quarters of a mile wide, which is a good harbor of refuge, sheltered from all winds from **SW.** around by **N.** to **E.** Even in southerly winds there is comparatively good shelter, as the force of the sea is greatly broken by the numerous ledges and islands surrounding the entrance. This harbor is rather difficult of access to strangers, who should always endeavor to make Tennant's Harbor to the southward; or, in southerly winds, to anchor under the northern shore of Spruce Head Island in what is known as False White Head Harbor.

Spruce Head Island.

Spruce Head Island is the first large island met with on the western shore after passing White Head, and is nearly abreast of the northern end of Hewell's Island. It is about a mile to the northward of White Head, close in with the main shore, lies **NW.** by **W.** and **SE.** by **E.**, is three-quarters of a mile long, with an average width of a little over a quarter of a mile, and is formed by two rocky heads covered with a scattered growth of stunted spruce and fir, and connected by low land about twenty feet above sea-level. On its southern shore may be seen the buildings and apparatus belonging to the granite-quarries, which are usually in full operation. Between this island and White Head is, as before mentioned, the entrance to Seal Harbor, which may be entered in the day-time, but should not be attempted at night. The southeastern head of this island is known as **Spruce Head** or **False White Head.** The former is the preferable name, but the latter is often used, and gives the name to False White Head Harbor under its northern shore.

Norton's and Rackliff's Islands.

Rackliff's and *Norton's* islands, on the western side of Seal Harbor, are two rocky, wooded islands, lying nearly **N.** and **S.** from each other, and separating Seal Harbor from Rackliff's Bay, to the westward of it. Norton's Island is much the smaller as well as the southernmost of the two, lies about a quarter of a mile to the westward of White Head Island, extends in a **N.** by **E.** and **S.** by **W.** direction, and is half a mile long. It is separated from Rackliff's Island by a passage a hundred and seventy-five yards wide, through which five feet may be carried; but there is no passage between it and White Head,—the space being full of rocks and ledges. Rackliff's Island is a mile long **NE.** and **SW.**, with a width varying from two hundred yards to half a mile. It is highest about the middle, (where it is over one hundred feet above sea-level,) and to the southeastward shows a somewhat steep and precipitous face. There are several wharves and a few houses on the eastern side of the island, but it is for the most part covered with the usual growth of small fir and spruce, in which respect it is similar to Norton's Island.

Burnt Island.

The small rocky island lying off the southern shore of Spruce Head, and about one hundred yards from it, is called **Burnt Island.** It is low and covered with a growth of spruce.

Seal Island.

Also, three hundred yards off the northeastern shore of White Head Island lies a low, rocky islet about a hundred yards in diameter, having a sparse and stunted growth of grass and bushes on it. It is known as Seal Island, and is dangerous of approach on account of the ledges surrounding it. It may also be remarked that about midway between White Head Light-house and Grafton Island lies Yellow Ridge Island, a bare, rocky islet, about a hundred and fifty yards long and twenty feet high, with deep water on all sides. It bears **W.** by **S.** ½ **S.** from the southern end of Grafton Island, distant nearly three-quarters of a mile, with a dangerous ledge, called **Yellow Ledge**, about two hundred and fifty yards to the westward of it, and marked by an iron spindle with a copper cylinder on top, painted red. The usual channel through the Muscle Ridges passes between Yellow Ridge Island and Grafton Island with fifteen fathoms water.

Yellow Ridge Island.

Three hundred yards due **N.** from the northeastern end of Grafton Island lies **Hurricane Island**, extending **NE.** and **SW.**, about two hundred yards long, twenty feet high, and bare with the exception of a single tree which stands at its northeastern end. Eleven feet may be carried between it and Grafton Island, but it is not well for strangers to attempt this passage.

False White Head Harbor.

False White Head Harbor, formed by the curve in the northern shore of Spruce Head Island, is only used as a harbor of refuge in southerly gales, (or by vessels caught by a head tide and light winds when bound through the Muscle Ridges,) and affords secure anchorage, in two fathoms at low water, about three hundred and fifty yards from shore. The approach to it from the eastward is obstructed by three islands lying nearly **N.** and **S.** from each other, and surrounded by dangerous ledges. These islets lie off Thorndike's Point, the southwestern point of entrance to Weskeag River, and are known, severally, as Eben's, Tommy's and Garden islands.

Eben's and Tommy's Islands.

Eben's Island, the northernmost, is about four hundred yards to the southward of Thorndike's Point, and is about two hundred and fifty yards in diameter, low, bare, rocky and surrounded by shoals. Eight feet may be carried between it and Thorndike's Point. Tommy's Island lies a third of a mile to the southward of Eben's Island, and is also bare and rocky. It is surrounded by ledges and should not be approached closely on either side.

Garden Island.

Garden Island lies eight hundred yards **S SE.** from Tommy's Island and five-eighths of a mile **NE.** ½ **N.** from Spruce Head, (the eastern extremity of Spruce Head Island,) and is very irregular in shape, rocky,

from twenty to thirty feet high, and surrounded by ledges. The northern entrance to False White Head Harbor lies between this island and Tommy's Island, and through it not less than three fathoms may be taken to within six hundred yards of the head of the cove. The middle of the passage is obstructed by dangerous ledges, and it is necessary to keep either the southern shore of Tommy's Island or the northern shore of Garden Island aboard to avoid them.

Oak Island. The space between Hewell's and Dix islands is full of bar ledges and islets, prominent among which are the Clam Ledges, (before mentioned,) which will be described under the head of dangers in Muscle Ridge Channel. Three hundred yards **NW.** from the northern end of Dix Island lies Oak Island, bare of trees, twenty feet high, and about two hundred yards long. From Otter Island it bears **SW. ½ S.**, distant nearly half a mile, and there is a four fathom channel between them.

Fogg's Point. That point of the mainland which approaches to within a hundred and seventy-five yards of the northwestern end of Spruce Head Island and forms with it the eastern boundaries of Seal Harbor is called Fogg's Point. It is low and cleared near its eastern extremity, with several houses upon it; and behind these rises **Fogg's Hill**, ninety feet high, and partly wooded. Dangerous ledges lie to the eastward of this point, and indeed no part of the shore from Fogg's Point to the entrance to Weskeag River should be approached by strangers. The southern end of this point is sometimes, although erroneously, called **Elwell's Point**.

Thorndike's Point. From Fogg's Point the shore, with many curves and indentations, has a general course about **NE.** for a mile and a quarter to the entrance to Weskeag River. The land varies in height from forty to eighty feet, with rocky faces, and is partly cleared and partly wooded. Thorndike's Point, the southwestern point of entrance to Weskeag River, is one hundred feet high and diversified with woods and cleared land. Its eastern face is rocky and steep, and the point is in some places bold-to; but there are many dangerous outlying ledges, which render an approach to it unsafe for strangers.

Weskeag River. Weskeag River, on the banks of which **South Thomaston** is built, is a crooked and shallow stream, about two-thirds of a mile wide at its mouth, but rapidly diminishing in width until at South Thomaston it is but little over fifty yards wide. Its width at the mouth is also still further diminished by an island a quarter of a mile long, called Spaulding's Island,—the available channel being thus diminished to a little over four hundred yards.

Spaulding's Island. Spaulding's Island lies **E NE.** and **W SW.**, is about a quarter of a mile long, twenty feet high, and very irregular in shape. Its southern shore, which is the only side of the island shown to vessels bound through the Muscle Ridge Channel, appears barren and rocky, covered with a scant and sickly growth of yellowish grass, dotted at long intervals with lone spruce and fir trees, and with bare ledges cropping out all over the surface. On the summit, however, there is a thin growth of spruce, birch and maple, and some trees on the northern side of the island, which will appear over the summit. It is surrounded by bare and sunken ledges, none of which are buoyed, thus rendering the approaches to the river very unsafe for strangers.

Otter Point, the eastern point of entrance to Weskeag River, is about thirty feet high, barren and rocky, and has a single small spruce tree on its southern extremity.

Ash Point. From Otter Point the main shore has a direction about **E.** by **N.** for about one mile and three-eighths to Ash Point, which is sixty feet high at its highest part, gently sloping, cleared from the water's edge to the top, and the cleared land backed by trees. There are several houses on the summit and slopes, and off its southern side, at a distance of a quarter of a mile, lies **Ash Island**, already described on page 226, and easily recognizable by the tall tripod or day-beacon on its southeastern end. This beacon marks the turning point in the Muscle Ridge Channel, which now leads more to the northward through **Owl's Head Bay**, which is contained between Munroe and Sheep islands on the east and the mainland of Owl's Head on the west.

The western shores of the bay from Ash Point to Owl's Head have a general direction **NE. ½ N.** for three miles; but are much indented by coves and small harbors, which are used by fishing-vessels of light draught. None of these coves are of importance, as they are not safe for strangers nor for any vessels except those of light draught. The general characteristics of this shore are hilly, undulating lands, in some places cleared, in others wooded, and with scattered houses here and there.

At **Owl's Head Harbor**, which is a little over two miles above Ash Point, there is a small settlement. The harbor itself is formed by a small cove under the southern shore of Owl's Head and to the westward of what is known as **Dodge's Point.** This point may be known by the stone pier built out from it for the accommodation of the self-registering tide-gauge formerly placed there.

Owl's Head and Light-house. Owl's Head forms the southern point of entrance to Rockland Harbor and the northern promontory of the Muscle Ridge Channel. It is a high, round, rocky and precipitous head, having a very few stunted fir trees growing out of the almost perpendicular sides of the hill, and is surmounted by a light-house known as Owl's Head Light-house, a white tower, nineteen feet high, which shows a fixed white light, of the fourth order of Fresnel, from a height of one hundred and five feet above the sea, visible fifteen miles. The keeper's dwelling, which is near the light-tower, is a low wooden building, painted white. The geographical position of this light-house is

Latitude ..... **44° 5′ 31″ N.**
Longitude ..... **69° 2′ 39″ W.**

There is no fog-signal.

Rockland Harbor, the first harbor, on the western side of the bay, to the northward of the Muscle Ridge Channel, is formed by a large cove, whose northern point is called Jameson's Point and its southern point Owl's Head. It lies exactly opposite to North Haven Island, (the northernmost of the Fox Islands,) and is a mile and a quarter long and a mile and a half wide. The city of **Rockland,** an enterprising and thriving town, occupies the western shore of this harbor; and two prominent spurs of land, known, respectively, as **Crockett's Point** and **Atlantic Point,** make out from this western shore, (forming part of the wharf-line of the town,) with shallow coves on both sides. **Rockland Harbor.**

Jameson's Point, the northern point of entrance to Rockland Harbor, is about two miles and a quarter **NW. by N.** from Owl's Head, is of moderate height, sloping gently to the water, and has scattered groves of trees here and there over its surface. On its summit are a few houses, and on its southern extremity is an earthwork whose tall flag-staff forms a conspicuous mark. **Jameson's Point.**

When between Owl's Head and Crabtree Point (the southwestern end of North Haven Island) there will appear ahead, in the middle of the bay, a very large, high, wooded island, apparently dividing the bay into two parts. This is **Long Island,** whose eastern shores have been already described on pages 200–201, and separates East from West Penobscot Bay. On the western shore of the bay will appear the city of Rockland, with the towns of Rockport and Camden from five to seven miles to the northward of it, and the great range of the Camden Hills towering over all. The channel of West Penobscot Bay passes between this shore and Long Island; while the Middle Passage, leading into East Penobscot Bay, passes between North Haven and the small islands lying to the southward of Long Island.

From Jameson's Point the western shore runs about **NE. by N.** for a mile and a quarter to Clam Cove,—the land being of moderate height, but not steep, partly wooded and mainly cleared and settled. Clam Cove, a long and narrow cove, penetrating the western shore in a **SW. by W.** direction for three-quarters of a mile, is half a mile wide at its mouth and gradually contracts to a width of a quarter of a mile at its head. For half its length it is bare at mean low water, but comfortable anchorage is found in its mouth in from four to seven fathoms, soft bottom,—the sea from the eastward being broken by a small, bare, rocky island called **Ram Island,** which lies **NE.** from the southern point of entrance and serves as a sort of breakwater. There is a passage with thirteen feet between it and the southern point, but it is not fit for strangers;—the proper course being to pass to the northward of Ram Island to enter the cove. Clam Cove is only half a mile to the southward of Rockport Entrance,—the shore having a general course of about **N NE.,** with high, gently sloping land, diversified with woods and cultivated fields. **Clam Cove.**

The entrance to Rockport Harbor is nearly two miles and a half above Jameson's Point, and the course along shore from Rockland Harbor is **NE. by N. ½ N.** It is formed by an arm of the bay running **N.** and **S.,** a mile and a half long, three-quarters of a mile wide at its mouth and two hundred and fifty yards at its head, where is built the village of **Rockport.** The eastern point of entrance to the harbor is called **Beauchamp Point,** and is the southern extremity of the peninsula separating Rockport from Camden. It is sixty feet high, with gently sloping surface, and is partly cleared and partly wooded with spruce, birch and oak. On its eastern and western sides it is bold-to; but it must not be approached from the southward by strangers on account of the numerous shoals and ledges extending in a southerly direction from it towards Indian Island. **Rockport Harbor.**

One hundred and fifty yards to the southward of Beauchamp Point lies Indian Island, a small, bare islet about two hundred and fifty yards long. At its southern end it rises to a height of about sixty feet, and its eastern, southern and southwestern faces are rather precipitous. The surface is grassy and bare of trees, and there is a small house at the northern end and a light-house and dwelling on the southern end. Indian Island Light-house is the guide to Rockport Harbor. It is a square, brick tower, thirty feet high and painted white, and shows a fixed red light, of the fifth order, from a height of forty-seven feet above the sea, visible twelve nautical miles. The tower is attached to a brick dwelling with frame addition, painted white, and its geographical position is **Indian Island and Light-house.**

Latitude ..... 44° 9′ 54″ N.
Longitude ..... 69° 3′ 22″ W.

There is no passage between Indian Island and Beauchamp Point,—the space between them, as before remarked, being filled with sunken ledges.

Lowell's Rock is a bare, rocky islet about one hundred yards to the southward of Indian Island; but there is no passage between them. It is about one hundred and fifty yards long, and is easily recognized by the red spindle, with cage and ball on top, which is placed on the ledges about fifty yards to the southward of it. **Lowell's Rock.**

From Beauchamp Point to the entrance to Camden Harbor the distance is about two miles, and the general direction of the western shore of the bay is **N NE.;** but about **E NE.** from Beauchamp Point, six hundred and fifty yards distant, is Deadman's Point, with a small cove between them, formed by a curve in the shore. Deadman's Point is bare and grassy, about forty feet high, with a gently sloping surface, most of which is under cultivation. From this point the general trend of the shore is **N. by E. ½ E.** for about a mile and a half to Ojier's Point, the southwestern point of entrance to Camden Harbor. It is, however, somewhat irregular in outline; and about half a mile above Deadman's Point there is formed a sort of cove, called **Hog Cove,** with two rocky islets off its mouth. That to the northward is called **Goose Rock,** and lies nearly a quarter of a mile from shore; the other is **Hog Cove Ledge,** and is connected with the mainland at low water. The shores between Ojier's and Deadman's points are from one hundred and fifty to two hundred feet high, and are for the most part cleared and cultivated, although some clumps of trees are seen here and there. **Deadman's Point.**

Camden Harbor. The entrance to Camden Harbor is about six and one-third miles to the northward of Owl's Head and a little over two miles above Rockport Entrance, and is contained between Northeast Point on the north and Ojier's Point on the south. The harbor is formed by a large cove with two arms,—one running **N NE.** and called **Sherman's Cove** or **Outer Harbor**; the other running **N NW.** and called **Inner Harbor.** Into the latter flows the **Megunticook River** **Northeast Point** or **Morse's Point** is long, rather low, and bare of trees, lies **N.** and **S.**, and has off its southern point a large iron spindle surmounted by a copper cylinder and gilt ball painted red; and another, painted black and surmounted by a copper cylinder, a little to the eastward of the red spindle. The northern part of the point is wooded. **Ojier's Point** is about sixty feet high, with steep slopes and low, precipitous faces to a height of ten feet above the water. Its southern slopes are entirely cleared, while from its summit to the northward it is thickly wooded. About three-eighths of a mile to the northward lies **Metcalf's Point,** low and level, cleared and cultivated near the shore, and backed by hills with wooded slopes and grassy summits thickly dotted with houses.

Negro Island and Light-house. Off Metcalf's Point lies Negro Island, on which is the light-house,—the guide to the harbor. The island is small, of moderate height, about a quarter of a mile long, with somewhat steep faces, and has a few scattered trees upon it. There is a passage an eighth of a mile wide between this island and Metcalf's Point, but it is nearly dry at low water, and is seldom used except by small boats. On the southern end of the island, which is thirty feet high, is built a light-house called Negro Island Light-house, a white tower sheathed with wood, and showing a fixed white light, of the fourth order of Fresnel, from a height of fifty-two feet above the sea, visible twelve miles. Its geographical position is

Latitude	**44° 12′ 4″ N.**
Longitude	**69° 2′ 56″ W.**

A low, white house, standing near the tower, is the keeper's dwelling.

The entrance to Camden from the southward and eastward is to the eastward of Negro Island Light-house, between it and the dangerous **Outer Ledges** off Northeast Point, and the course in heads nearly midway between the summit of **Mount Megunticook** and that of **Mount Beattie,**—the former being thirteen hundred and the latter eight hundred feet high, and both forming the most prominent landmarks for entering the harbor. **Camden** is built at the base of Mount Beattie.

When abreast of Deadman's Point the islands and islets to the southward of Long Island will be seen to the eastward and northeastward,—forming the eastern limits of West Penobscot Bay and the western boundary of the Middle Passage. Of these the southernmost is a bare rock, twenty feet high and one hundred and fifty yards long, called Robinson's Rock. It is nearly opposite to Indian Island Light-house, from which it bears **E. by S. ½ S.**, distant nearly three miles and a half, (which is here the width of the bay,) and from Owl's Head Light-house it bears **NE ½ E.**, distant four miles and seven-eighths. Dangerous ledges, for the most part bare at low water, surround it, extending to the southward a quarter of a mile, to the northward four hundred yards, and to the northeastward one-third of a mile. They are not buoyed, but should be, and this will be recommended.

Robinson's Rock.

About two-thirds of a mile to the northward of Robinson's Rock will be seen a small, rocky island with steep faces and wooded with fir. This is Mark Island, lies **N NE.** and **S SW.**, is between five and six hundred yards long, eighty feet high, and very bold-to on its western shore,—vessels being able to stand boldly to within one hundred yards of the island with four fathoms water. An excellent channel, with from twelve to fourteen fathoms water, exists between this island and Robinson's Rock, leading into the Middle Passage. It is about seven hundred and fifty yards wide between the lines of three fathoms, is perfectly unobstructed, and may be safely used by strangers, as the ledge to the southward of Mark Island is buoyed.

Mark Island.

To the northward of Mark Island, and between it and Lasell's Island, lie several bare and sunken ledges, dangerous to vessels standing to the eastward. The most remarkable of these is the westernmost, which lies about eight hundred yards **N NE.** from Mark Island, and is called **Goose Rock.** It is a rocky islet, bare of all vegetation, and surrounded by shoal water; but it may be approached from the westward within one hundred and seventy-five yards with seven fathoms. From Negro Island Light-house, at the entrance to Camden, it bears **SE. by E.**, a little over three miles distant. To the southeastward, nearly a quarter of a mile, lies a ledge bare at low water; to the northeastward, a little over a quarter of a mile, lies another; and between and among these ledges wind deep channels with from ten to seventeen fathoms water. Between Goose Rock and Mark Island there is a channel eight hundred yards wide, with from seven to thirteen fathoms, obstructed only by a ledge, bare at low water, which lies about one hundred and fifty yards to the northward of Mark Island. This channel may also be used by strangers, who need only keep in the middle to pass safely through with not less than nine fathoms.

Goose Rock.

Lasell's Island, which lies about a mile and an eighth to the northeastward of Mark Island, is about twelve hundred yards long **N.** by **E.** and **S.** by **W.**, diversified with woods and cleared lands of moderate height and bold-to. Its southern end is the highest, and is rocky, steep and wooded, while the northern end is composed of nearly level land, cleared and cultivated, has several houses upon it, and shows a steep, almost perpendicular face to the westward. There is no passage between this island and Long Island, as a mass of shoals extends the whole distance, surrounding the various islands between them.

Lasell's Island.

Two-thirds of a mile **E. ¾ N.** from Mark Island, and half a mile **SW. by S. ½ S.** from Lasell's Island, lies Saddle Island, about four hundred and fifty yards long **N.** and **S.**, and composed of two hillocks, one at each end, forty feet high, with low, flat land between them,—whence the name of the island. It is thinly wooded with a scattered growth of scrub and a few trees, and is tolerably bold-to,—its western side, which is the shoalest, having nine fathoms two hundred yards from it. There is a safe channel with seven fathoms between this island and Lasell's Island. It is not, strictly speaking, in West Penobscot Bay, however, but in the Middle Passage. **Saddle Island.**

About an eighth of a mile to the northeastward of Lasell's Island lies **Lime Island**, small, low and sandy, about two hundred yards long and pretty thickly wooded; and about two-thirds of a mile to the northeastward of this lies Job's Island, which marks the eastern point of the southern entrance to Gilkey's Harbor. It is a little over a mile and a half long **NE.** and **SW.**, and when seen from the southward and westward appears rather low, wooded, and faced by a white sand beach. The eastern side of the island is, however, steep and rocky. The northern end, which is joined to the main portion by a narrow causeway, is sometimes called **Middle Island**, and is sixty feet high and thinly wooded. Between Job's and Lime islands there extends a line of ledges for the most part bare at low water; and the western shore of the former is also shoal and should not be approached within less than three hundred and fifty yards. **Job's Island.**

On the western side of the southern entrance to Gilkey's Harbor lie two very small, low islands, with a few trees upon them, known as Ensign Islands. From the southern point of Job's Island they bear about **N NW.**, a little over three-quarters of a mile distant, and from the southern end of Seven Hundred Acre Island **SW. by S. ½ S.**, distant about eleven hundred yards. These are connected with this latter point by a mass of shoals and ledges for the most part bare at low water. **Ensign Islands.**

Job's Island is connected at its northern end by a bridge with **Minot's Island**, or **Spruce Island**, as it is sometimes called, small and low, with a few trees upon it, and a little over a third of a mile long **NE.** and **SW.** It lies about a third of a mile from the western shore of Long Island; but there is no safe passage between them,—the whole space being occupied by flats and ledges. About three hundred yards off its southwestern end lies a bad ledge, bare at low water, called **Minot's Ledge.**

Nearly three-quarters of a mile to the westward of Minot's Island, and a little over half a mile to the northward of Ensign Island, is the southern extremity of a large island forming the western shore of Gilkey's Harbor, and called Seven Hundred Acre Island. It lies about **N NE.** and **S SW.**, is a mile and five-eighths long, about one hundred feet high in its highest parts, with a very gentle slope, and is for the most part under cultivation, though there is a large, thick patch of woods near the centre. Its southwestern end, which is forty feet high, is rocky and barren, with scattered clumps of trees upon it, conspicuous among which is a group of very tall birch trees. The northern end of the island is nearly opposite to, but a little below, the settlement of The Beach on the western shore of the bay. **Seven Hundred Acre Island.**

Warren's Island lies to the eastward of the northern end of Seven Hundred Acre Island, at a distance of about two hundred and fifty yards. It extends **N.** and **S.**, is about three-quarters of a mile long, and for the most part cleared and under cultivation. Its northern end is, however, thickly wooded with spruce and fir, and extends into a low, sandy point with a few small fir trees upon it. This is the southern point of the main entrance to Gilkey's Harbor, and is about six hundred yards to the southwestward of Grindel's Point. **Warren's Island.**

Next to the eastward of Warren's Island, separated from it by a narrow strait, lies **Spruce Island**, of irregular shape, extending **N.** and **S.**, and about half a mile long. At its southern end is a somewhat steep hillock, sixty feet high, thinly covered with the usual growth of spruce and fir; but the rest of the island is diversified by woods and cleared fields.

Grindel's Point, the northern point of entrance to Gilkey's Harbor, is low and rocky, and has on its summit a grove of low, bushy trees. On its southern extremity is built Grindel's Point Light-house, a square, white tower, joined to the keeper's dwelling, (which is also white,) and shows a fixed white light, of the fifth order of Fresnel, from a height of thirty-nine feet above the sea, visible eleven miles. Its geographical position is **Grindel's Point and Light-house.**

Latitude	44° 16′ 53″ N.
Longitude	68° 56′ 35″ W.

Gilkey's Harbor, one of the best in this part of the bay, is contained between the western shore of Long Island on the east and Seven Hundred Acre, Warren's and Spruce islands on the west. The most commonly used channel into the harbor passes to the northward of these islands, between them and Grindel's Point. The southern entrance, which passes between Seven Hundred Acre Island and Job and Spruce islands, is obstructed by outlying islands and ledges, and should not be used at night. That part of **Long Island** which forms the eastern shore of this harbor is known as **South Islesboro'**; and when seen from West Penobscot Bay will appear over the islands as undulating land varying in height from sixty to one hundred and forty feet, and showing alternate woods and cleared and cultivated fields dotted with houses. It extends to Seal Harbor, nearly two miles and three-quarters above Grindel's Point, where it is connected with **North Islesboro'** by a very narrow strip of low land separating Bounty Cove on the eastern from Crow Cove on the western side of the island. **Gilkey's Harbor.**

The western shore of West Penobscot Bay from Northeast Point (the northern point of entrance to Camden) has a general course about **NE. ½ N.** for a little over five miles to Duck Trap Harbor. The shores are for the most part formed by the foot-hills of the Camden Mountains; are in some places steep, in others gently sloping, and are almost all cleared, cultivated and settled. The peaks of **Megunticook** thirteen hundred feet, **Garey's Mountain** seven hundred and sixty feet, **Bald Rock** eleven hundred feet, **Darey's Mountain** seven hundred **Camden Mountains.**

and sixty feet, and **Frohock's Mountain** four hundred and eighty feet high, are seen as you progress to the northward, while on the eastern side of the bay lies Long Island with its adjacent islets.

Duck Trap Harbor.

Duck Trap Harbor is formed by a large cove on the western shore, contained between Spruce Head on the east and Frohock's Point on the west, between which two points it is about a mile and a half in width. The settlement of Lincolnville is built at the base of **Duck Trap Mountain**, a precipitous hill with bare summit seven hundred and forty feet high, having its slopes partly wooded, but for the most part covered with scrub and bushes. It is next to the northeastward of Frohock's Mountain, with comparatively low, undulating land between them, diversified with woods and cultivated fields.

Frohock's Point.

Spruce Head, the northeastern point of entrance to the cove, is low, grassy, and dotted with a scattered growth of fir and spruce; while Frohock's Point, the southwestern point of entrance, shows cultivated fields and grassy lands dotted with houses, and several wharves extending out from it. Just above this point is that part of the settlement locally known as **The Beach**, which is of some importance as a watering-place during the summer season.

Great Spruce Head.

To the northward of Spruce Head the western shore of the bay has a course first **NE.** by **E.** for about a mile and a half, then turns about **NE.** by **N.** ½ **N.** to Great Spruce Head, a steep bluff one hundred and sixty feet high, very thickly wooded from its base to its summit. The shore between the two heads is somewhat steep, and diversified with wooded and cultivated lands. Great Spruce Head is directly opposite to Seal Harbor, on the western shore of Long Island. The bay is here a little over a mile and a half wide, and the clear channel is still further contracted by three islets, called, respectively, Flat, Seal and Hog islands, lying off the entrance to Seal Harbor, and reducing the width of the passage to about one mile.

Flat Island, the southernmost, lying almost exactly in the middle of the entrance to Seal Harbor, is low, flat and grassy; while **Seal Island**, which is on the northern side of the entrance, is sixty feet high, rocky, and bare except for a few trees on its summit and northeastern end. A passage with from three to five fathoms exists between these two. **Hog Island**, the northernmost, is a quarter of a mile to the northward of Seal Island; but there is a shallow bar connecting them. The island is about four hundred yards long, forty feet high, and wooded. Long ledges extend from its northern end.

Saturday Cove.

From Great Spruce Head the western shore gradually turns to the northward with a regular curve to Belfast Bay, about three miles and a half above the head. The shores partake of the same general character as those to the southward, but are somewhat higher, ranging from two hundred to five hundred feet, with steep slopes, partly wooded and partly cultivated. About three-quarters of a mile above Great Spruce Head is Saturday Cove, a small indentation, of little importance as an anchorage, and very shallow. There is here a small settlement of about the same size as that at The Beach, and of importance only as a summer resort.

Brown's Head.

Beyond Saturday Cove the western shore presents no noticeable features;—showing merely very high, steep shores, partly wooded and partly cultivated, until up with Brown's Head, about two miles and three-quarters above. This head, which forms the southwestern promontory of Belfast Bay, is sixty feet high, steep, rocky, and wooded on its slopes, but its summit is nearly level and cleared, and there is a settlement here, called **Brown's Corner**. This is almost exactly opposite to Turtle Head, the northern extremity of Long Island,—the distance between them being a little over four miles.

On the eastern side of the bay, above Grindel's Point, the western shore of Long Island is low, but partakes of the same general character as that to the southward, being diversified with wooded slopes and cleared fields dotted with houses. Five-eighths of a mile above the point is a wooded projection, jutting out into a long, low, flat, grassy point, called **Gooseberry Point**;

Seal Harbor.

and about two miles above this there is formed a large cove of irregular shape, which makes in a **NE.** by **E.** direction for nearly a mile, almost cutting the island in two. This is Seal Harbor, which affords excellent anchorage in from five to ten fathoms and is entirely unobstructed. Flat Island, (mentioned above,) small, low, flat and grassy, lies almost exactly in the middle of the entrance, with a channel about half a mile wide on its southern side with from nine to ten fathoms, and another about three hundred and fifty yards wide on its northern side with from four to eight fathoms water. This latter passage leads between the islet and Seal Island, (also mentioned above,) the high, bare, rocky islet to the northward; but the best channel is that on its southern side.

Crow Cove makes in just to the southward of Seal Harbor, between a rocky, wooded head, sixty feet high, on the north, and the gently sloping cleared lands of South Islesboro' on the south. Though small and narrow, it affords good anchorage in from two to four fathoms and is entirely unobstructed.

Sprague's Cove.

The northern point of entrance to Seal Harbor is a long, low, flat point, wooded at its southern end, where it is twenty feet high. Three-quarters of a mile above it the shore turns abruptly to the eastward and then to the northeastward, and continues for about seven-eighths of a mile to Sprague's Cove, a small indentation with from twelve feet to six fathoms, but unsheltered. From Sprague's Cove to Marshall's Point, the northwestern end of Long Island, the distance is nearly two miles, past steep, thickly wooded shores from one hundred to one hundred and fifty feet high.

Marshall's Point.

Marshall's Point itself is low, very gently sloping, bare of trees, but grassy and under cultivation. Here the shore turns abruptly to the eastward for about seven-eighths of a mile, and then as abruptly to the northward for about the same distance, terminating in Turtle Head, the northern extremity of the island. Thus is formed a commodious and deep cove, with from three to six fathoms in it, called **Turtle Cove**, and affording good

PROOF FROM UNFINISHED PLATE

PLATE No. 1506

NORTHERN PART OF

PENOBSCOT BAY

MAINE

Scale 80,000

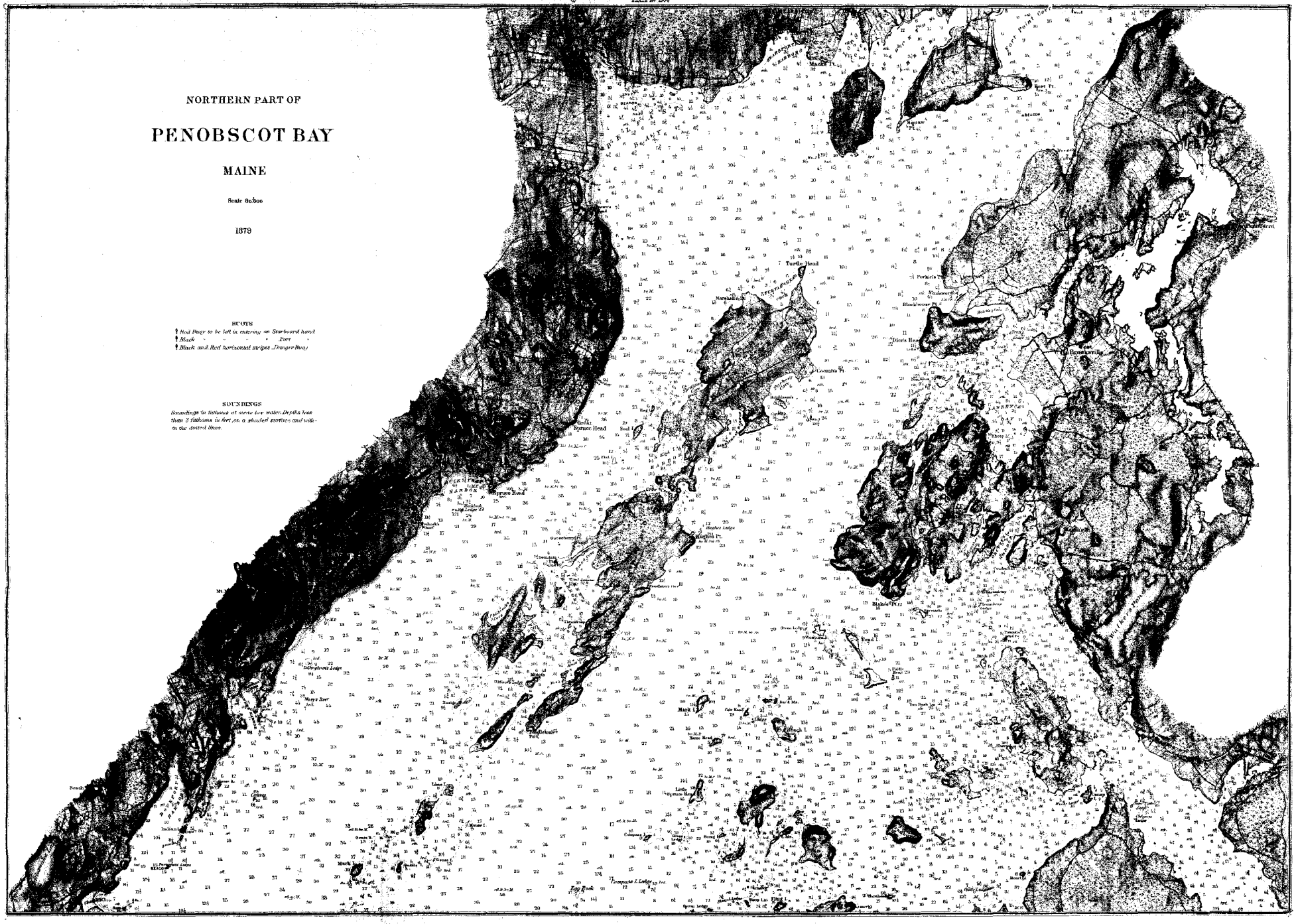
1879

BUOYS

Red Buoy to be left in entering on Starboard hand
Black " " " " Port "
Black and Red horizontal stripes Danger Buoy

SOUNDINGS

Soundings in fathoms at mean low water. Depths less than 3 fathoms in feet, on a shaded surface and within the dotted lines.



anchorage in southerly and easterly winds. A bare rock lies off the southern shore of the cove at a distance of a quarter of a mile **Turtle Head** has been already described on page 201.

Belfast Bay, which begins at Brown's Head, is the northwestern arm of Penobscot Bay, as Penobscot River is its northeastern arm. It is about three miles wide at its entrance, but rapidly contracts in width to about eight hundred yards at the mouth of the **Passagassawakeag River**, now more commonly known as **Belfast River**. The entrance to the bay is contained between **Sawyer's Point** (or **The Beaver Tail**, as it is sometimes called) on the north and Brown's Head on the south, and is obstructed only by **Steele's Ledge**, marked by a square stone beacon and two buoys. Sawyer's Point is cleared, gently sloping and under cultivation, and is three miles and a half to the northwestward of Turtle Head, and two miles and three-eighths to the westward of Sears' Island. Brown's Head has already been described. The city of **Belfast** is seen from off the entrance to the bay,—situated at the mouth of Passagassawakeag River and on its western bank. **Belfast Bay and Harbor.**

From Sawyer's Point the northern shore of Penobscot Bay takes a general direction about **NE. ½ E.** for nearly two miles to the town of Searsport, situated at the head of a large cove on the northern shore, which affords good anchorage in from two to four fathoms, and shelter in all winds except those from the southward. The eastern side of the harbor is formed by Sears' Island, formerly called **Brigadier Island**, which separates this harbor from Cape Gellison and the harbor of Stockton. It is a mile and three-quarters long, of an oval shape, lies **N.** by **E.** and **S.** by **W.**, and is of moderate height. Its southern half is well wooded with a variety of trees, while the rest of the island has alternate woods and cleared fields, and there are one or two houses. At its northern end it is connected by a causeway, four hundred yards long, with the mainland. **Sears' Island.**

Searsport is a small village, of little importance, but is very conspicuous in appearance,—being situated amidst beautifully cultivated fields backed by high, wooded lands,—most of the houses and churches being painted a brilliant white. It is situated at the head of the harbor and extends along the eastern shore. Both shores are cleared and cultivated; but **Mack's Point**, the eastern point of entrance, is thickly wooded. On the eastern side of this point makes in **Long Cove**, with from ten to fifteen feet water, bounded on the east by Sears' Island and its causeway. It is, however, only used by local pilots and small fishermen. **Searsport Harbor.**

On the western side of Sears' Island, between it and Cape Gellison, is formed a large cove, affording convenient anchorage in from two to six fathoms, and shelter in all winds except those from the southward. The village of **Stockton** is situated on its northern shore, although at some distance back from its head, and the cove is usually known as Stockton Harbor. It has a population of between two and three thousand, but is of little commercial importance. There is, however, some fishing interest, and considerable business in building of fishing and other vessels. Its eastern point of entrance is formed by the southern extremity of Cape Gellison, known as **Squaw Point**, and sometimes **Sandy Point**, the latter name being derived from its appearance, which is that of a sandy bluff with perpendicular faces. **Stockton Harbor.**

The eastern shore of Stockton Harbor is formed by Cape Gellison, the northern point of entrance to Penobscot River, an irregularly-shaped peninsula, which makes in a southerly direction for about two miles into the bay. It is of moderate height, gently sloping, and diversified with wooded and cleared lands, and is also pretty thickly settled. Squaw Point, its southwestern point, has been already described as the eastern point of entrance to Stockton Harbor. Its eastern extremity, known as **Fort Point**, is steep, rocky, bare of trees and about sixty feet high. It is easily recognized by the large white hotel with cupola a little way back from the pitch of the point, and by the light-house on its eastern end, which is the guide to Penobscot River. (See description of Penobscot River.) **Cape Gellison.**

DANGERS

IN APPROACHING AND ENTERING WEST PENOBSCOT BAY.

I. ***From the Eastward, by the main channel.***—In coming in by this channel from the eastward vessels should pass about a mile to the southward of Matinicus Rock Light-houses and steer about **W.** by **N.** ¾ **N.** On this course there are no dangers; but, if standing to the northward on a wind, you must, when about a mile and a quarter to the westward of Matinicus Rock, beware of The South Breaker, dry at low spring tides, which lies a mile and five-eighths **NW.** by **W.** from Matinicus Rock Light-houses, a mile and three-quarters **S.** ¼ **W.** from the southwestern end of Ragged Island, and is marked by a spar-buoy painted red and black in horizontal stripes, placed in five fathoms on its southwestern side. To avoid this ledge do not stand to the northward of Matinicus Rock Light-houses bearing **SE.** by **E.** ½ **E.** ***The South Breaker.***

The Inner Breaker lies one mile **N.** ¼ **E.** from The South Breaker, and nearly seven-eighths of a mile **S.** ¼ **W.** from the southwestern end of Ragged Island, and has three feet at low water. There are shoal spots to the northeastward of it;—one, three hundred yards off, having fourteen feet, and the other, seven hundred yards off, having eight feet. Neither of these nor The Inner Breaker are in the way of vessels bound in by the main channel; and those standing to the eastward on a wind may avoid them by not going to the eastward of **South Point** (the southwestern end of Matinicus) bearing **N.** ½ **E.** The range for The Inner Breaker is South Point and the southwestern end of Ragged Island in one on a bearing of **N.** ¼ **E.** ***The Inner Breaker.***

About half a mile to the northward of The Inner Breaker are the Southwest Ledges, extending in a line along the southern face of Ragged Island at distances varying from two hundred to nine hundred yards. The three largest are bare at low water, and the two westernmost (which lie N. ¾ W. and S. ¾ E. from each other, a quarter of a mile apart) have respectively one and eight feet upon them. There is no buoy; but the ledges may be avoided by not standing to the eastward of South Point bearing N NE.

Southwest Ledges.

There are very many more ledges surrounding Ragged and Matinicus islands; but they are not in the way of any vessels but those bound into the small harbors on those islands, and no description of them would be intelligible to strangers.

On steering up through the main channel beware of Bantam Ledge, or *The Bantam*, bare at half-tide, which lies five miles NW. ¼ N. from Matinicus Rock Light-houses, two miles and a quarter NW. by W. ½ W. from the southwestern end of Ragged Island, and a little over two miles W. by S. ½ S. from South Point of Matinicus. It is marked by a spar-buoy painted red and black in horizontal stripes, placed in five fathoms on its southern side, and may be passed on either hand, but the usual course passes to the westward of it.

Bantam Ledge.

Two miles and a quarter N NE. from Bantam Ledge buoy lie the dangerous Foster's Ledges, also marked by a spar-buoy painted red and black in horizontal stripes. These ledges lie E NE. and W SW. from each other, three hundred yards apart,—the westernmost, which has six feet, bearing NW. ½ N. from South Point of Matinicus, distant nearly two miles, and SE. ½ S. from Outer Green Island, distant three miles and three-eighths. The easternmost ledge has thirteen feet, and there is deep water (from six to twelve fathoms) on all sides of the ledges; but the sailing-line passes well to the westward of them.

Foster's Ledges.

If you are standing to the eastward towards Matinicus Island, do not approach it nearer than three-quarters of a mile, to avoid the dangerous half-tide ledges, known as the Black Rocks, which extend in a line NE. and SW. off Hall's Cove, six hundred yards from shore. They are four in number, but are not dangerous except to vessels beating in or out.

Black Rocks.

The Pigeon Ground is composed of two pieces of flat ground lying nearly E. by N. and W. by S. from each other, and separated by a deep channel, three-quarters of a mile wide, having from ten to twenty-four fathoms. The shoalest water upon the Ground is three and a half fathoms, and this spot bears from Bantam Ledge N. by W. ¾ W., distant two miles and five-eighths; from the eastern end of Little Green Island S. by E. ¾ E., three miles and three-eighths; from the highest part of Outer Green Island S. ¾ E., two miles and an eighth; and from the striped buoy on Foster's Ledges W. by N. ½ N., distant one mile and three-quarters. Soundings of from five to nine fathoms surround this shoal spot, covering an area a little over a mile long by half a mile wide. The sailing-line passes five-eighths of a mile to the eastward of the shoalest spot, in about thirty fathoms. A little over a mile to the westward of the three and a half fathom spot is the western portion of the Ground, which has three and three-quarter fathoms, and bears from Little Green Island S. ¼ E., distant three miles and three-eighths; from the highest part of Outer Green Island S. by W. ½ W., two miles and a half; and from the three and a half fathom spot on the eastern portion of the Ground W. by S. ½ S., distant nearly a mile and a quarter. These shoals are only dangerous to vessels of the largest size, or in heavy weather from the southward,—in which latter case they often break with great violence.

The Pigeon Ground.

Three-quarters of a mile SE. by S. ¾ S. from Outer Green Island lie two half-tide ledges, known as Outer Green Island Ledges, and sometimes, though erroneously, as *Green Island Seal Ledges.* They are close together, N. by E. and S. by W. from each other, and are surrounded by shoal water, covering an area nearly half a mile long by three hundred yards wide. There is no safe passage between them and Outer Green Island. They bear from the buoy on Foster's Ledges NW. ½ N., two miles and five-eighths, and from the buoy on Bantam Ledge N. by W. ¼ W., distant a little over four miles. The sailing-line passes nearly a mile to the eastward of them.

Outer Green Island Ledges.

There is wide beating-room after you pass to the northward of Matinicus, obstructed only by a few small pinnacle rocks, some of which are, however, very dangerous. Of these may be mentioned, first, Zephyr Ledges, dry at half-tide, lying a quarter of a mile NE. from No Man's Land, with shoal water extending N. and S. from them three hundred yards; *Zephyr Rock*, six hundred yards to the northeastward of the Ledges and half a mile NE. from No Man's Land, having five feet at low water; *Collins' Rock*, nearly a mile N. by E. ½ E. from the houses on Outer Green Island and a mile and a quarter E. ½ N. from Little Green Island, with five feet at low water; and Bay Ledge, well to the eastward of the channel, bare at low water, and lying S. by W. ⅜ W. from Heron Neck Light-house, distant three miles and three-eighths, NE. by N. ¾ N. from the northern end of Matinicus Island, five miles and a half, and E. by N. ½ N. from Outer Green Island, distant seven miles and an eighth, which last distance is about the width of the channel. Bay Ledge, being at the point of junction of the eastern and middle channels, is marked by a nun-buoy of the second class, (No. 2,) painted red, and placed in eight fathoms on its southwestern side. The ledge is bold-to on all sides, and may be approached

Zephyr Ledges.

Bay Ledge.

anywhere within one hundred yards with not less than five fathoms. To avoid the ledge at night, or should the buoy be gone, do not stand to the eastward of Heron Neck Light-house bearing N NE.

To avoid Collins' Rock, on the western side of the channel, do not stand to the westward of the eastern extremity of Outer Green Island bearing S SW., which also avoids The Northern Triangles, very dangerous sunken ledges, lying to the northward of Little Green Island at an average distance of three-quarters of a mile. They are a series of detached ledges, dry in places at low water, and generally break heavily at half-tide. They lie E. by S. and W. by N., covering a space one mile and an eighth in length by three-eighths of a mile in breadth, and are marked by a can-buoy of the first class (No. 1), painted black, and placed in ten fathoms ENE. from them. These ledges bear from the northern end of Metinic Island E. by N. ¼ N., nearly four miles distant, and from Great Two Bush Island SE. by S. ¾ S., two and a half miles distant. They are not in the way of vessels using this channel unless they are standing to the westward on a wind. ***The Northern Triangles.***

Three miles and three-quarters NE. ⅞ N. from Bay Ledge buoy, and on the eastern side of the main channel, is Perry's Ledge, with from twenty-four to twenty-eight feet at low water. It is not dangerous except in heavy weather from the southward, when it breaks at low tide. The shoal of the ledge (twenty-four feet) is at its northern end, and bears from Heron Neck Light-house W. ¼ S., distant three miles and an eighth, and from Owl's Head Light-house SW. by S. ⅜ S., distant nearly seven miles. The mark for this ledge is Owl's Head Light-house open just to the eastward of Munroe Island; and when that light-house is brought in range with the eastern end of the island you are well clear of the ledge and to the westward of it. ***Perry's Ledge.***

Two miles and three-quarters W. ¾ S. from the shoal of Perry's Ledge, and on the western side of the main channel, lies a similar shoal, with four and a half fathoms, called, from the name of its discoverer, Junken's Ledge. From Outer Green Island it bears N. by E. ⅞ E., distant five miles, and from the eastern end of Munroe Island S. ¼ E., distant five miles and a half. It is only dangerous in heavy weather from the southward. ***Junken's Ledge.***

In beating in by this channel beware of standing too far to the eastward, between Bay Ledge and Perry's Ledge, on account of the almost continuous line of dangerous rocks extending from the Brimstone Islands to the White Islands, very few of which are buoyed. No intelligible description can be given of these ledges, nor are there any well defined marks for them,—the safest rule that can be given being not to go to the eastward of the range of Little Hurricane Island with the westernmost of the White Islands on a bearing of N NW.

Of the ledges between the Brimstone Islands and the White Islands may be mentioned, beginning with the easternmost, *Eastern Ledge*, bare at half-tide, lying seven hundred yards S. by E. ⅜ E. from Brimstone Islands; *Buffalo Ledges*, also bare at half-tide, lying six hundred and fifty yards SW. by W. from Little Brimstone Island, with a sixteen and a half feet shoal about three hundred and fifty yards SW. from them; *Otter Island Ledge*, bare at three-quarters ebb, lying four hundred yards E SE. from the southern end of Otter Island; *Yellow Rock*, always out, and surrounded by dangerous shoals extending to the northward and southward from it for two hundred yards,—the bare rock lying three hundred and fifty yards W. by N. ¼ N. from the southern end of Otter Island; *Lane's Ledge*, also out at low water, lying three hundred and fifty yards NW. by W. ¼ W. from Yellow Rock; *Knubble Ledges*, with four feet at low water, lying between seven and eight hundred yards NW. by W. ¼ W. from Lane's Ledge, and six hundred yards W. by S. ¾ S. from Roberts' Islands; *Old Horse Ledge*, bare at half-tide, about seven hundred and fifty yards W. by S. ¼ S. from the Knubble Ledges, and about fourteen hundred yards W. by S. ¾ S. from Roberts' Islands; *Middle Ledge*, bare at half-tide, a quarter of a mile NW. by N. ¼ N. from the western end of Roberts' Islands; *Channel Rock*, a bare islet, three-eighths of a mile NW. ¼ N. from the western end of Roberts' Islands, and surrounded by shoals; *Channel Ledge*, with from nine to twelve feet, six hundred yards W. ⅛ N. from the Rock, with an eleven feet shoal four hundred yards W SW. from it; *Colt Ledge*, with eight and a half feet, nine hundred yards W. by N. ¼ N. from Channel Ledge, and a little over a mile and a quarter SE. ¼ S. from Heron Neck Light-house, and marked by a red spar-buoy (No. 4); *Big Shoal*, bare in places at low tide, nearly four hundred yards to the northeastward of Colt Ledge, and about a mile and a quarter SE. ½ E. from Heron Neck Light-house; *Arey's Ledges*, a number of bare rocks lying E. and W., four hundred yards to the northward of Big Shoal, and a mile and an eighth SE. by E. ¼ E. from Heron Neck Light-house, and marked by a red spar-buoy (No. 2); *Breaker Ledge*, bare at three-quarters ebb, three-eighths of a mile NW. by W. ¼ W. from Big Shoal, and nearly a mile SE. from Heron Neck Light-house, and marked by a black spar-buoy (No. 1); *The Breakers*, three dangerous rocks lying in a line E. and W. from each other and about three hundred and fifty yards apart, between the bearings of S. ½ E. and SE. by S. ⅛ S. from Heron Neck Light-house, in places bare at low water and in others having from five to nine feet at low water; *Heron Neck Ledge*, bare at half-tide, between five and six hundred yards N. by W. ½ W. from the westernmost ledge of The Breakers, and the same distance S. by W. from Heron Neck Light-house; *James and Willie's Ledge*, a part of which is always out, forming the southeastern portion of Deadman's Ledges, and marked by a black spar-buoy half a mile W. by N. ½ N. from Heron Neck Ledge, and the same distance W. by S. ¼ S. from Heron Neck Light-house; and *the western portion of Deadman's Ledges*, which are always bare, lying to the southward of Hurricane Island, and seven-eighths of a mile to the westward of Heron Neck Light-house.

Dangers--West Penobscot Bay. On the western side of the channel, in standing towards the Muscle Ridge Islands do not go to the westward of the eastern end of Munroe Island bearing **N.** by **E.** $\frac{1}{8}$ **E.**, in order to avoid, first, *Two-Bush Reef*, making off to the northeastward from Two-Bush Island; second, *Halibut Rock*, half a mile due **S.** from the southwestern end of Andrews' Island, and bare at half-tide; third, *Halibut Ledge*, or *False Halibut Rock*, (as it is sometimes called,) with nine feet water, lying between five and six hundred yards **E.** by **N.** $\frac{1}{8}$ **N.** from Halibut Rock, and half a mile **SE.** $\frac{1}{4}$ **S.** from the southern end of Andrews' Island; fourth, *Sunken Pond Island Ledge*, with six feet, half a mile **E.** by **N.** $\frac{1}{2}$ **N.** from the northeastern end of Andrews' Island, and nearly twelve hundred yards **SE.** $\frac{1}{2}$ **E.** from Little Pond Island; and, fifth, *Northeastern Pond Island Ledge*, bare at low water, lying nearly four hundred yards **N.** $\frac{1}{4}$ **W.** from Sunken Pond Island Ledge, and nine hundred yards **E.** by **S.** $\frac{3}{4}$ **S.** from Little Pond Island.

After passing to the northward of Hurricane Island vessels must beware of *an eleven feet shoal* two miles and five-eighths **NW.** by **W.** from the highest part of the island, and three miles and a half **S.** by **W.** $\frac{7}{8}$ **W.** from Stand-in Point. It is nearly opposite to Fisherman's Island Passage, from which it bears **E.** by **S.** $\frac{5}{8}$ **S.**, and there are no local marks by which vessels may avoid it, other than when in its vicinity not to stand to the eastward of Brown's Head Light-house bearing **NE.**

Inner Bay Ledges lie a mile and a quarter to the northward of the eleven feet spot mentioned above,—their southern end being marked by a large can-buoy, (No. 2,) painted red. They are a very dangerous group of sunken and bare rocks, lying in a line nearly **N.** and **S.** from each other and about five-eighths of a mile in length. The northern end bears **W.** $\frac{1}{2}$ **S.** from Crockett's Point, a little over two miles distant, and **SW.** from the beacon on Fiddler's Ledge, distant one mile and three-eighths. The southern end, out at low water, bears **W.** by **S.** $\frac{3}{4}$ **S.** from Crockett's Point, two miles and a quarter distant, and from the beacon on Fiddler's Ledge **SW.** by **S.**, distant one mile and seven-eighths. There are five of the Inner Bay Ledges,—the northernmost with four and a half feet, the easternmost with four feet, the two southern bare at low water, and the middle ledge with three and a half feet. About one hundred feet to the northward of the northern ledge is placed a red spar-buoy (No. 6) in five fathoms water,—the sailing-line passing well to the westward of it. The red can-buoy off the southern end is in seven fathoms, and must also be left to the westward; while the black spar-buoy on the northeastern shoal is not in this channel at all, and vessels pay no attention to it.

Inner Bay Ledges.

When between the eleven feet shoal and Inner Bay Ledges it is best not to stand to the eastward of Stand-in Point bearing **NE.** by **N.** $\frac{1}{2}$ **N.**, by which means the dangerous ledges lying to the westward of the White Islands, Leadbetter's Island and Green Island will be avoided. Of these the most prominent is Medric Rock, a bare rock, lying **N NE.** and **S SW.**, one hundred and fifty yards long, with depths of from two to ten feet extending eight hundred yards to the northward of it, and ledges bare in places at half-tide extending to the southward nine hundred yards.

Medric Rock.

About nine hundred yards to the northward of Medric Rock, and three-quarters of a mile to the eastward of the red can-buoy on the southern end of Inner Bay Ledges, lies *a half-tide rock*, not named, with sunken ledges, having from four to eight feet upon them at low water, extending from it due **N.** for nine hundred yards. The above bearing of Stand-in Point clears this ledge as well as Medric Rock.

Drunkard's Ledge.

About a mile and a quarter **N NE.** from the red buoy on the northern end of Inner Bay Ledges will be seen a black spindle surmounted by a cage, and appearing just to the westward of Stand-in Point. This is on Drunkard's Ledge, a dangerous half-tide ledge lying five-eighths of a mile **SW.** by **W.** $\frac{3}{4}$ **W.** from Stand-in Point and on the northern side of the western entrance to Fox Islands Thoroughfare. To avoid this ledge do not stand to the eastward of the highest part of Mark Island bearing **N.** $\frac{1}{4}$ **E.**, with Robinson's Rock in range with it.

The large, square, stone beacon, surmounted by a mast and cask, which appears about five-eighths of a mile to the westward of the spindle on Drunkard's Ledge, is on *Fiddler's Ledge*, in Fox Islands Thoroughfare.

Brewster Point Ledge.

On the western side of the bay, when to the northward of Rockland, do not stand farther to the westward than the range of the beacon on Porterfield's Ledge and Indian Island Light-house on a bearing of **N.** by **E.** $\frac{1}{2}$ **E.**, in order to avoid Brewster Point Ledge, a half-tide rock four hundred yards **SE.** from **Brewster Point**, the southern point of entrance to Clam Cove. The ledge is surrounded by shoal water, and the point must receive a berth to the westward, under all circumstances, of not less than three-eighths of a mile.

Porterfield's Ledge.

At night, when in the vicinity of Rockport Entrance, if bound up the bay, do not stand farther to the westward than to bring Indian Island Light-house to bear **N.**, in order to avoid Porterfield's Ledge,—the beacon on which is a sufficient warning during the day-time. This ledge is the southernmost of the shoals to the southward of Beauchamp Point, and is dry at low water. From the spindle on Lowell's Rock it bears **S.** by **W.** $\frac{1}{2}$ **W.**, distant one hundred yards, and from Beauchamp Point it is distant seven-eighths of a mile in the same direction. The beacon, which is square and twenty feet high, is a guide to vessels coming either from

the northward or southward; for on the northern side of the ledge, between it and Lowell's Rock, is an excellent channel half a mile wide, with from eight to eleven fathoms, which is used by vessels coming from the northward. The main channel of the bay leads to the eastward of this ledge.

Lowell's Rock.

The red spindle seen about a thousand yards to the northward of Porterfield's Ledge beacon is on Lowell's Rock, which is bare at low water, and lies about two hundred and fifty yards to the southward of Indian Island, marking the northern limits of the north channel into Rockport. The spindle, which is of iron, is surmounted by a cage eleven feet long, with a ball on top, and is to be left to the westward by vessels coming from the southward.

Robinson's Rock.

On the eastern side of the channel look out for the shoals surrounding Robinson's Rock, on the northern side of the entrance to the Middle Passage. They are for the most part bare at low water, and extend to the southward from the Rock a quarter of a mile, to the northward four hundred yards, and to the northeastward a third of a mile. Not being marked in any way they are dangerous, and buoys will be recommended upon them.

Mark Island Ledge.

About half a mile to the northward of Robinson's Rock will be seen the black spar-buoy on Mark Island Ledge, and just to the northward of the buoy a black spindle on the dry part of the reef. Mark Island Ledge makes off to the southward from Mark Island for an eighth of a mile, and has two feet on its southern end not far from the buoy. This buoy, which is marked No. 3, is placed in four fathoms off its southern end; Indian Island Light-house bearing **W.** by **N.** and Negro Island Light-house **NW.** $\frac{3}{8}$ **N.** The spindle is of iron and surmounted by a cage. The sailing-line passes well to the westward of both.

The Graves.

On the western side of the passage, when between Camden and Rockport, look out for The Graves, a rocky islet, lying **S.** by **E.** from Negro Island Light-house, a mile and a quarter distant. It is exactly in the way of vessels coming along shore from the southward, and should be marked by a beacon. From Indian Island Light-house The Graves bear **NE.** by **E.** $\frac{1}{2}$ **E.**, distant a mile and a half, and they are nearly a mile from the Rockport shore.

Between Goose Rock and Lasell's Island lie *several dangerous ledges*, some of which are bare at low water, and others have from eleven to seventeen feet upon them. They are easily avoided by not standing to the eastward of the western extremity of Mark Island bearing **SW.** by **S.** $\frac{1}{8}$ **S.**, or the same end of Seven Hundred Acre Island bearing **NE.** by **N.** $\frac{1}{8}$ **N.** Lasell's, Job's and Lime islands may be approached quite closely.

Outer Ledges.

When off Camden, if standing to the westward, do not approach Northeast Point too closely in order to avoid Outer Ledges, sometimes called *Northeast Ledges*, a group of dangerous rocks lying to the southward and eastward of Northeast Point. They cover an area between five and six hundred yards long **N NE.** and **S SW.**, many of them are bare and all are dangerous. Their northern end is marked by a black spar-buoy, their southern end by a red spar, and the most prominent of the dry ledges by a black spindle with copper cylinder on top.

Moxy's Reef.

Three-quarters of a mile to the northeastward of the northern end of Outer Ledges, and half a mile from shore, is Moxy's Reef, with from three and a half to four and a half fathoms, and not dangerous except to vessels of the largest size.

Dillingham's Ledge.

A mile and a quarter **NE.** $\frac{1}{4}$ **E.** from Northeast Point, and about half a mile from the western shore of the bay, is Dillingham's Ledge, with nine feet at low water, and not marked in any way. This is a very dangerous ledge, in view, especially, of the fact that the only reliable rule for avoiding it is not to pass to the westward of Negro Island Light-house bearing **SW.** $\frac{1}{4}$ **W.** A buoy will be recommended upon this ledge.

Eight Feet Rock.

On approaching Ensign Islands, on the eastern side of the channel, look out for Eight Feet Rock, which lies nine hundred yards **W.** by **N.** $\frac{1}{4}$ **N.** from the northernmost of the islands, and one mile **S.** by **W.** $\frac{3}{4}$ **W.** from the western extremity of Seven Hundred Acre Island. It is not buoyed, but should be, and this will be recommended.

Haddock Ledge.

Do not approach the southern shore of Seven Hundred Acre Island inside of the range of its two southwestern points, in order to avoid *Biscuit Ledge*, which is bare at low water, and makes off from that shore in a southerly direction for three hundred yards. Nor, when up with Duck Trap Harbor, must you stand farther to the westward than to bring Spruce Head (see page 232) to bear **NE.** $\frac{1}{2}$ **N.**, in order to avoid Haddock Ledge, with four feet at low water, which lies nearly in the middle of the entrance to the harbor, five-eighths of a mile **SW.** $\frac{3}{4}$ **W.** from Spruce Head, and nearly two miles **SE.** by **E.** $\frac{3}{4}$ **E.** from Grindel's Point Light-house. A red nun-buoy of the second class, marked No. 2, is placed in seven fathoms off the southwestern end of the ledge.

Above this there are no dangers until you have passed to the northward of Seal Island, when you must be careful not to go to the eastward of the western extremity of that island bearing **S SW.** until you are to the northward of Sprague's Cove, in order to avoid *the dangerous ledges*, many of them bare at mean low water and all of them bare at low spring tides, which, beginning at the northern end of Hog Island, extend in a line **NE.** by **N.** $\frac{1}{2}$ **N.** for seven-eighths of a mile along the western shore of Long Island, at distances varying from a quarter to five-eighths of a mile. These ledges are not buoyed, but a buoy will be recommended on the westernmost and most dangerous one, which is known as *Sprague's Ledge*.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING WEST PENOBSCOT BAY BY THE MAIN CHANNEL.

I. ***From the Eastward.***—Pass about a mile to the southward of Matinicus Rock Light-houses, and steer **W.** by **N.** $\frac{3}{4}$ **N.** until the western extremity of Matinicus Island bears **NE.** $\frac{3}{8}$ **N.** and the southern end of Ragged Island **NE.** by **E.** $\frac{3}{4}$ **E.**, when you will have thirty-six fathoms, and must steer **N.** by **E.** $\frac{1}{4}$ **E.** On this course, when the eastern extremity of Munroe Island bears **N.** by **W.** and Heron Neck Light-house **E.** $\frac{7}{8}$ **N.**, steer **N.** $\frac{3}{4}$ **E.**, which course will lead, with not less than seventeen fathoms, to abreast of Camden Entrance. On this course, when Negro Island Light-house bears **W.** by **N.**, distant two miles and an eighth, the southern end of Job's Island **E.** $\frac{3}{4}$ **N.**, distant two miles and a quarter, and the western extremity of Seven Hundred Acre Island **NE.** $\frac{5}{8}$ **N.**, distant three miles and three-eighths, steer **NE.** by **N.**, which course will lead, with not less than eleven fathoms, to abreast of Turtle Head. When the northern extremity of this head bears **SE.** by **E.** $\frac{1}{4}$ **E. Easterly,** the southern extremity of Sears' Island **NE.**, and Sawyer's Point (the northern point of entrance to Belfast Bay) **NW.** by **N.** $\frac{3}{8}$ **N.**, steer **NE.** by **E.** $\frac{1}{4}$ **E.**, if bound up Penobscot River, and follow the directions for that river.

The above courses pass a mile to the southward of Matinicus Rock; a mile and three-eighths to the southward of The South Breaker; three-quarters of a mile to the westward of Bantam Ledge; a mile to the westward of Foster's Ledges; five-eighths of a mile to the eastward of the shoal of The Pigeon Ground; a mile to the eastward of Outer Green Island Ledges; a mile and a half to the eastward of Collins' Rock; a mile to the eastward of Junken's Ledge; a mile and five-eighths to the westward of Perry's Ledge; a mile and an eighth to the westward of Inner Bay Ledges; a mile and three-eighths to the westward of Drunkard's Ledge; five-eighths of a mile to the westward of Robinson's Rock; nearly three-quarters of a mile to the westward of Mark Island Reef; three-quarters of a mile to the westward of Goose Rock; five-eighths of a mile to the westward of Eight Feet Rock; a mile and three-quarters to the eastward of Dillingham's Ledge; a mile and an eighth to the eastward of Haddock Ledge; and three-eighths of a mile to the westward of Sprague's Ledge.

On the above courses, to enter Ragged Island Roads.—With Matinicus Rock Light-houses bearing **E.** $\frac{3}{4}$ **S.**, distant nearly five miles, the southern end of Ragged Island **NE.** by **E.** $\frac{7}{8}$ **E.**, and the western extremity of Matinicus Island **NE.** $\frac{1}{2}$ **N.**, steer **NE.** $\frac{3}{4}$ **E.** about for the northern end of Ten-Pound Island. This course will lead safely to the anchorage.

On the above courses, to enter Carver's Harbor.—On the **N.** by **E.** $\frac{1}{4}$ **E.** course up the bay, when the middle of Outer Green Island bears **W.** by **S.** $\frac{1}{2}$ **S.**, distant a mile and five-eighths, the centre of No Man's Land **SE.** $\frac{1}{4}$ **E.**, distant four miles and five-eighths, and Heron Neck Light-house **NE.** $\frac{1}{2}$ **E.**, steer **NE.** by **E.** $\frac{3}{8}$ **E.**, if bound in by the main channel. On this course, when Heron Neck Light-house bears **NW.** by **N.** $\frac{1}{4}$ **N.**, distant a mile and a quarter, and the southwestern extremity of Otter Island **SE.** by **E.** $\frac{3}{4}$ **E.**, distant a mile and three-quarters, you will have fifteen fathoms, and must steer **N.** by **E.**, (heading almost exactly for Green Ledge,) and follow the directions for the harbor.

Or, you may steer **NE.** $\frac{1}{2}$ **E.** for Heron Neck Light-house until within a mile and three-eighths of it and the highest part of Hurricane Island bears **N.** $\frac{1}{8}$ **E.**, when steer **NE.** by **E.** $\frac{3}{4}$ **E.**, and enter by the western channel.

Or, on the **N.** by **E.** $\frac{1}{4}$ **E.** course up the bay, when Heron Neck Light-house bears **NE.** by **E.** $\frac{1}{2}$ **E.** and the eastern extremity of Munroe Island **N.** $\frac{1}{2}$ **W.**, steer **NE.** by **E.** $\frac{3}{4}$ **E.**, and enter by the western channel.

On the above courses, to enter Hurricane Sound.—On the **N.** $\frac{3}{4}$ **E.** course up the bay, when Heron Neck Light-house bears **E.** $\frac{5}{8}$ **S.** and the eastern extremity of Munroe Island **N.** by **W.** $\frac{5}{8}$ **W.**, (in range with Owl's Head,) steer **E.** by **N.** $\frac{1}{4}$ **N.**, and enter the Sound by the western channel between Hurricane Island and the White Islands.

On the above courses, to enter Rockland Harbor.—On the **N.** $\frac{3}{4}$ **E.** course up the bay, as soon as you open Owl's Head Light-house to the eastward of Munroe Island on a bearing of **NW.** by **N.** $\frac{3}{8}$ **N.**, steer **N NW.** until the light-house bears **SW.** $\frac{7}{8}$ **S.**, distant about five-eighths of a mile, and the harbor is fully open. Now steer **W.** by **N.** $\frac{3}{4}$ **N.** about for the northern end of Crockett's Point, and follow the directions for the harbor.

PROOF FROM UNFINISHED PLATE

PLATE No. 150

ENTRANCE TO WEST PENOBSCOT BAY

MAINE

Scale Solsbo

1879

BUOYS

Red Buoy to be left in entering on Starboard hand

Black, " " " Port

Black and Red horizontal stripes - Danger Buoy

SOUNDINGS

Soundings in fathoms at mean low water. Depths less than 3 fathoms in feet on a shaded ground, and within the dotted lines.

Nautical Miles

1 0 1 2 3 4

To enter East Penobscot Bay through the Middle Passage.—On the N. ¾ E. course through the bay, when Crabtree Point bears E. ¼ N., distant two miles and an eighth, the highest part of Mark Island N. by E. ¼ E., distant four miles and a quarter, and Indian Island Light-house NW. by N. ¾ N., steer NE. ½ N. Northerly, which will lead safely through the Middle Passage and up with the entrance to Castine. *Sailing Directions---West Penobscot Bay.*

On the above courses, to enter Rockport Harbor.—On the N. ¾ E. course up the bay, when Owl's Head Light-house opens to the eastward of Munroe Island on a bearing of NW. by N. ⅜ N., as before, steer N. by W. ¼ W., which course will lead to the southward of the beacon on Porterfield's Ledge. When abreast of this beacon steer N. ½ E. into the harbor.

Or, you may continue the N. ¾ E. course until Stand-in Point bears E. by S. ⅝ S. and Indian Island Light-house NW. by N. ½ N., when steer NW. by N. ⅛ N., which course will lead, with not less than ten fathoms, between Porterfield's Ledge and Indian Island. On this course, when Indian Island Light-house bears E. by N. ½ N., distant seven hundred yards, steer N. ½ E. into the harbor.

On the above courses, to enter Camden Harbor.—On the N. ¾ E. course up the bay, when Indian Island Light-house bears NW. ⅝ N. and Negro Island Light-house N. by W. ¼ W., steer N. by W. ⅛ W., which will lead into the harbor.

On the above courses, to enter Gilkey's Harbor.—On the N. ¾ E. course through the bay, when the highest part of Mark Island bears E. ½ N., distant five-eighths of a mile, and Negro Island Light-house NW. by N. ⅛ N., distant two miles and seven-eighths, steer NE. ¼ N. into the harbor through the Southern Passage.

To enter Duck Trap Harbor.—On the N. ¾ E. course through the bay, when Negro Island Light-house bears NW. by W. ¾ W., and the western extremity of Seven Hundred Acre Island NE. ½ N., steer N. by E. ¾ E., which will lead into the harbor to the westward of Haddock Ledge.

To enter Gilkey's Harbor by the Northern Passage.—On the NE. by N. course between Long Island and the mainland, when Grindel's Point Light-house bears E. ⅛ N., steer for it until within about six hundred yards, when the Northern Passage will be fully open, with the northern extremity of Warren's Island bearing S. by E., distant three hundred yards. Here you will have eight fathoms, and SE. by E. ⅝ E. will lead, with not less than four fathoms, up to the anchorage.

To enter Seal Harbor.—On the NE. by N. course, as above, when Grindel's Point Light-house bears E SE., distant three-quarters of a mile, and the summit of Great Spruce Head N NE., steer NE. by E., which will lead into the harbor and up to the anchorage with not less than six fathoms.

On the above courses, to enter Belfast Harbor.—On the NE. by N. course, as above, as soon as you fairly open the bay and harbor, with Marshall's Point (on Long Island) bearing NE. ½ E., distant a mile and three-eighths, and Brown's Head NW. ¼ N., distant two miles and three-quarters, steer N NW., which course will lead safely into the harbor.

II. *Coming from the Westward, to enter West Penobscot Bay by the Main Channel.*—Pass two miles to the southward of Monhegan Island and steer E. ¼ S. towards Matinicus Rock Light-houses. On this course, when the northwestern extremity of Matinicus Island bears NE. by E. ⅝ E. and the southern end of Metinic Island N. ¾ W., steer NE. ¼ E., carrying not less than twenty fathoms, until the middle of Outer Green Island bears N NW. Westerly and the northern end of Matinicus Island E. ¾ S. You are now abreast of The Pigeon Ground, and must steer N. by E. ¼ E., following the directions for the bay previously given.

DANGERS

IN APPROACHING AND ENTERING WEST PENOBSCOT BAY.

II. *By the passage between Matinicus Island and Wooden Ball Island.*—This channel, which is over two miles wide, is in common use by vessels making Matinicus Rock from the southward; and, although there are a number of obstructions, it is quite safe for a stranger if the directions given below are followed. The channel-way itself is entirely clear, but vessels beating in will find the western side foul, owing to the numerous ledges lying off the eastern shores of Matinicus and Ragged islands. These dangers are easily avoided by keeping on the eastern side of the passage, or, to be more explicit, not going to the westward of No Man's Land bearing N. by W. ¼ W.

Of the ledges to the eastward of Matinicus and Ragged islands the first met with, after passing to the northward of Matinicus Rock, is Brig Ledge, nine hundred yards **SE.** ½ **S.** from the southeastern end of Ragged Island. It is a rocky islet, about one hundred yards in diameter, bold-to on its eastern side, but shoal on its northern and southern ends; and it bears from Matinicus Rock Light-houses **N.** by **W.**, distant two miles and a quarter. Six hundred yards **N.** by **W. Westerly** from it, and an eighth of a mile from the Ragged Island shore, lies **High Ledge**, another rocky islet surrounded by shoal water. Six hundred yards to the northward of this, and off the mouth of **Camp Cove**, (on the Ragged Island shore,) is another bare rock, called **Camp Cove Ledge.**

Brig Ledge.

Three-eighths of a mile **N.** by **E.** ½ **E.** from Brig Ledge lies *Seal Ledge*, bare at low water; and about two hundred yards to the northeastward of this a rocky islet, an eighth of a mile long, called Green Ledge. From **Wilson's Head** (the northeastern extremity of Ragged Island) this ledge bears **S.** by **W.** ¼ **W.**, distant half a mile, and from Brig Ledge **NE.** by **N.** ¾ **N.**, the same distance.

Green Ledge.

To avoid all of these ledges off the Ragged Island shore do not stand to the westward of Wilson's Head bearing **N.** ¼ **E.**, or Matinicus Rock Light-houses bearing **S.**

A quarter of a mile **N.** by **E.** ½ **E.** from Wilson's Head, and six hundred and fifty yards **SE.** ¼ **S.** from the highest part of Ten-Pound Island, lies The Hogshead, a small, detached, bare rock, bold-to on all sides. To avoid it at night, do not stand to the westward of a line joining Matinicus Rock Light-houses, and No Man's Land on a bearing of **N.** ¾ **E.**

The Hogshead.

A mile and a half **NE.** ½ **N.** from Wilson's Head, three-quarters of a mile to the eastward of the Matinicus shore, and a mile and three-eighths to the southward of No Man's Land, lies Eastern Black Ledge, a bare, rocky islet about one hundred yards in diameter; and an eighth of a mile to the northeastward of this is *Tuckernuck Ledge*, bare at half-tide. *Mackerel Ledge*, also bare at half-tide, lies six hundred yards **N.** ⅝ **E.** from Tuckernuck Ledge, and three-eighths of a mile **N NE.** from Eastern Black Ledge. Between five and six hundred yards **NW.** by **W.** ¼ **W.** from Eastern Black Ledge, and three-eighths of a mile from the Matinicus shore, lies **Western Black Ledge**, another rocky islet, bold-to on all sides. Harbor Ledge, with four and a half feet at low water, lies five-eighths of a mile **NW.** from Eastern Black Ledge and six hundred yards **NW.** by **N.** ¼ **N.** from Western Black Ledge. It is off the entrance to Matinicus Harbor, and is marked by a spar-buoy, painted red and black in horizontal stripes, placed on its southern side in four fathoms. It is only in the way of vessels bound into Matinicus Harbor,—no others standing to the westward. Three hundred yards to the northeastward of it, and seven-eighths of a mile to the southwestward of No Man's Land, lies *The Barrel*, bare at low tide, and surrounded by shoal water.

Eastern Black Ledge.

Harbor Ledge.

Four hundred yards **SE.** by **S.** from Two Bush Island, half a mile **SW. Westerly** from No Man's Land, and three-eighths of a mile to the eastward of the northern end of Matinicus Island, lies Two-Bush Ledge, a rocky islet one hundred and fifty yards in diameter, and surrounded by shoal water, especially on its eastern side, where the shoals extend to a distance of three hundred and fifty yards. None of these ledges are buoyed, but they are easily avoided by not standing to the westward of No Man's Land bearing **N.** by **W.** ¼ **W.**, or Matinicus Rock Light-houses **S.** by **W.** ¼ **W.**

Two-Bush Ledge.

To the northeastward of No Man's Land lie the Zephyr Ledges and Zephyr Rock, the northernmost of the dangers in this passage. The ledges are two in number, lie six hundred yards **NE.** ¾ **N.** from No Man's Land, and are always out. A sixteen feet spot lies an eighth of a mile to the southward of the bare ledge; a fifteen feet spot one hundred yards to the northward of them; and *Zephyr Rock*, with five feet at mean low water, seven hundred yards to the northeastward, and nearly five-eighths of a mile due **NE.** from the northern extremity of No Man's Land.

Zephyr Ledges.

When past these ledges you are in the main channel, the dangers in which have been already described on pages 234–237.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING WEST PENOBSCOT BAY.

III. ***By the passage between Matinicus Island and Wooden Ball Island.***—Bring Matinicus Rock Light-houses to bear **NW.** ⅜ **W.**, distant nearly two miles, and the southwestern extremity of Wooden Ball Island **N.** by **E. Easterly**, and steer **N.** ¼ **E.**, passing about midway between Wooden Ball and Matinicus islands and carrying not less than six fathoms water. Continue this course until Heron Neck Light-house bears **N.** by **E.** ¼ **E.** and the middle of Outer Green Island **W. Northerly**, when you will have a depth of over fifty fathoms water, and must steer **NW.** by **N.** ¼ **N.**, heading about for the eastern extremity of Munroe Island and carrying not less than seven fathoms. On this course, when the highest part of Fisherman's Island bears **NW.** by **W.** ½ **W.** and Stand-in Point **NE.** by **N.** ¼ **N.**, steer **N.** ¾ **E.**, which course will lead, with not less than seventeen fathoms, to abreast of Camden Entrance; after which follow the directions for the bay given on page 238.

The above courses pass a mile and an eighth to the eastward of Matinicus Rock; five-eighths of a mile to the westward of Wooden Ball Island; three-quarters of a mile to the eastward of Eastern Black Ledge; five-eighths of a mile to the eastward of Tuckernuck Ledge; the same distance to the eastward of Mackerel Ledge; three-quarters of a mile to the eastward of No Man's Land; about twelve hundred yards to the eastward of the Zephyr Ledges; nearly half a mile to the eastward of Zephyr Rock; a mile and three-eighths to the westward of Bay Ledge; five-eighths of a mile to the westward of Perry's Ledge; and two miles to the eastward of Junken's Ledge.

DANGERS

IN APPROACHING AND ENTERING WEST PENOBSCOT BAY.

III. ***By the passage between Wooden Ball Island and Seal Island.***—This channel is nearly three miles wide, but is obstructed by the dangerous Malcolm Ledges, which lie almost exactly in the middle,—being a mile and a quarter to the westward of Western Head, (on Seal Island,) and a mile and five-eighths to the eastward of the northeastern end of Wooden Ball. They extend nearly **N NE.** and **S SW.** for about eight hundred yards, are bare at low water at both their northern and southern ends, and between the two have from three to five feet upon them. They are not buoyed, but are easily avoided by passing within a mile of either Wooden Ball or Seal Island. ***Malcolm Ledges.***

It may also be mentioned that, should the sea be very heavy, Western Head should receive a berth of not less than seven-eighths of a mile, if you are passing between it and the Malcolm Ledges, to avoid Gully Ledge, which lies nearly five-eighths of a mile **SW.** by **W.** ½ **W.** from the head, and has six and a half fathoms at mean low water. It breaks only in heavy weather from the southward, and is, therefore, not generally dangerous. If passing to the westward of the Malcolm Ledges you must look out, under the same circumstances, for Frenchman's Ledge, which lies exactly midway between Wooden Ball Island and the Malcolm Ledges,—being three-quarters of a mile distant from both. It has seven and three-quarter fathoms at low water, and breaks only in the heaviest weather from the southward. ***Gully and Frenchman's Ledges.***

There are no more dangers in this passage until you join the main channel.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING WEST PENOBSCOT BAY.

IV. ***By the passage between Wooden Ball Island and Seal Island.***—Bring Matinicus Rock Light-houses to bear **W.** by **S.** ½ **S.**, distant five miles and a quarter, the eastern extremity of Wooden Ball Island **NW.** ¼ **N.**, distant a little over three miles, and Western Head (on Seal Island) **N.** by **E.** ¼ **E.**, distant three miles, when you will have fifty-one fathoms, "brown mud, sand, pebbles and broken shells," and Heron Neck Light-house will bear **N.** ¾ **W.**, distant twelve miles and a half. Now steer **NW.** by **N.** ¾ **N.**, (which will lead nearly for the eastern end of Munroe Island,) and continue this course until the highest part of Frenchman's Island bears **NW.** by **W.** ½ **W.**, distant nearly two miles and three-quarters, and Stand-in Point **NE.** by **N.** ¼ **N.**, distant nearly five miles, when steer **N.** ¾ **E.**, and follow the directions for the bay given on page 238.

The above courses pass three-eighths of a mile to the westward of the Malcolm Ledges; the same distance to the eastward of Frenchman's Ledge; a mile and three-eighths to the eastward of Zephyr Rock; the same distance to the westward of Bay Ledge; five-eighths of a mile to the westward of Perry's Ledge; and about two miles to the eastward of Junken's Ledge.

DANGERS

IN APPROACHING AND ENTERING WEST PENOBSCOT BAY.

IV. ***From the Eastward, by the passage between Isle au Haut and Matinicus Seal Island.***—This passage (which is over seven miles wide at its entrance) is by far the best and safest entrance to the bay from the eastward. At its entrance it is obstructed only by Three Fathom Ledge, which lies a mile and three-eighths **E.** by **N.** ¾ **N.** from the eastern end of Seal Island and six miles and a half **S.** ½ **W.** from Saddle-back Ledge Light-house, and has three and a half fathoms at mean low water. Beyond this there are no dangers in the channel until you come up with Bay Ledge; but in heavy weather it may be well to look out ***Three Fathom Ledge.***

Dangers -- West Penobscot Bay, Eastern Channel. for *The Snippershan*, with six fathoms, which lies three miles and a half **N.** $\frac{5}{8}$ **W.** from the eastern end of Seal Island and over four miles **SW.** $\frac{3}{4}$ **S.** from Saddle-back Ledge Light-house. It is only dangerous in heavy weather from the southward, when it breaks with great violence.

It may also be well to remark that in beating care must be taken not to approach too closely the outlying islands to the southward of the Fox Islands, off which there are many bare and sunken ledges, already described on page 235, to which the navigator is referred. A good rule to avoid these ledges, in standing to the northward, is to go about as soon as the highest part of Western Ear (off Isle au Haut) bears **E.** $\frac{3}{4}$ **S.**, until you have passed to the westward of Otter Island; after which keep to the westward of Heron Neck Light-house bearing **NW.** by **N.** $\frac{3}{8}$ **N.** until you are to the northward of Bay Ledge. (See pages 234–235 for description of this danger.) When past this ledge, if you can see Owl's Head or the light on it, do not stand farther to the eastward than to bring it to bear **NW.** $\frac{1}{4}$ **N.**; but if you cannot see this, go about as soon as the western ends of Little Hurricane Island and the westernmost of the White Islands are in range on a bearing of **N NW.**

Perry's Ledge. When past Bay Ledge there is only one danger met with in the channel-way before this passage joins the Main Channel. This is Perry's Ledge, with four fathoms, which lies three miles and an eighth **W.** $\frac{1}{4}$ **S.** from Heron Neck Light-house and nearly seven miles **SE.** by **S.** $\frac{3}{8}$ **S.** from Owl's Head Light-house. It is not dangerous, except to vessels of large draught or in heavy weather from the southward, and is not buoyed.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING WEST PENOBSCOT BAY.

V. ***From the Eastward, by the passage between Isle au Haut and Matinicus Seal Island.***—Bring Saddle-back Ledge Light-house to bear **NW.** by **N.**, distant nine miles, the eastern extremity of Eastern Ear **N. Easterly,** distant a little over six miles, and the northern end of Seal Island **W.** $\frac{1}{2}$ **N.**, distant seven miles, when you will have forty-eight fathoms, "brown mud," and must steer **NW.** $\frac{3}{4}$ **W.**, which course will lead through the middle of the passage into the Main Channel. On this course, when the highest part of Fisherman's Island bears **NW.** by **W.** $\frac{1}{2}$ **W.**, distant nearly two miles and three-quarters, Stand-in Point **NE.** by **N.** $\frac{1}{4}$ **N.**, distant nearly five miles, and Owl's Head Light-house **NW.** by **N.** $\frac{7}{8}$ **N.**, distant nearly four miles and three-quarters, (and seen just clear of the eastern end of Munroe Island,) you are in the Main Channel, and **N.** $\frac{3}{4}$ **E.** will lead up the bay, following the directions given on page 238.

The above courses pass two miles and five-eighths to the northward of Three Fathom Ledge; a mile and an eighth to the northward of The Snippershan; two miles to the southward of Eastern Ledge; a mile and five-eighths to the southward of Buffalo Ledge; a mile and a half to the westward of Otter Island Ledge; a mile and a quarter to the westward of Yellow Rock and Lane's Ledge; seven-eighths of a mile to the westward of Old Horse Ledge; a mile and three-quarters to the eastward of Bay Ledge; a mile and a half to the westward of Middle Ledge, Channel Rock and Channel Ledge; about a mile and an eighth to the westward of Colt Ledge; a mile and three-eighths to the westward of Breaker Ledge; a mile to the westward of The Breakers; a mile and a quarter to the westward of Heron Neck Ledge; a mile to the southwestward of the bare ledges to the southward of Hurricane Island; and nine hundred yards to the eastward of Perry's Ledge.

On the above courses, to enter Carver's Harbor.—On the **NW.** $\frac{3}{4}$ **W.** course continue until Heron Neck Light-house bears **NW.** by **N.** $\frac{1}{4}$ **N.**, when steer for it until within a mile and a quarter, with the house on the eastern end of Roberts' Island bearing **E.** $\frac{3}{4}$ **S.**, distant a mile and a half, when steer **N.** by **E.**, (heading nearly for Green Ledge,) and follow the directions for the harbor.

On the above courses, to enter Hurricane Sound.—Continue the **NW.** $\frac{3}{4}$ **W.** course until Heron Neck Light-house bears **N.** $\frac{3}{8}$ **W.**, distant two miles, and the highest part of Hurricane Island **N NW.**, distant a little over three miles, when steer **N.** by **W.** $\frac{1}{4}$ **W.**, which will lead safely into the Sound; after entering which follow the directions for this passage.

DANGERS

IN APPROACHING AND ENTERING WEST PENOBSCOT BAY.

V. ***From the Westward, by the Two-Bush Channel, passing to the Northward of Monhegan Island.***—Two Bush-Channel, which is three miles and a quarter wide, leads between Two-Bush Island (the southernmost of the Muscle Ridge Islands) on the north and Little Green Island and Metinic Island on the south; but is obstructed by dangerous ledges both at its eastern and western ends. There are three ways of entering it from the westward,—one by passing between Monhegan and George's

islands, another by passing to the southward of Monhegan and to the westward of Metinic, and the third by passing between Metinic and the Green Islands. Of these the most commonly used is the first named. Both Monhegan and Metinic islands have been already described on pages 221–222.

Vessels coming into Penobscot Bay from the westward, inside of Monhegan, should not approach the western shore of that island nearer than a mile, to avoid the Duck Rocks, four bare, rocky islets, which lie off the northern and northwestern shores of Monhegan at distances varying from a quarter to half a mile. The most easterly islet is called **Eastern Duck Rock**; the two westernmost, **Western Duck Rocks**; and the one inshore, in the mouth of Deadman's Cove, **Inner Duck Rock**. ***Duck Rocks.***

There is also a sunken ledge, with six feet at low water, two hundred and seventy-five yards to the northward of the Western Duck Rocks. It is called *Sunken Duck Rock*, and is marked by a red spar-buoy (No. 2) placed in five fathoms water on its northern side. The large whistling-buoy which marks this entrance is placed a quarter of a mile **W NW.** from this buoy, and is also painted red.

On one of the Western Duck Rocks, twelve feet above high water, is built a day beacon, consisting of a wooden tripod fifty-seven feet high, with its upper half covered in and painted red. From it Monhegan Light-house bears **S SE.**, seven-eighths of a mile, and the fog-signal on Manana **S.** by **W.**, three-quarters of a mile distant.

On the northern side of the passage, between Monhegan and George's islands, is a very dangerous ledge, known as Old Man Ledge, or *The Old Man*, which is dry at two-thirds ebb,—lies nearly one mile **S.** $\frac{1}{2}$ **W.** from the southern end of Allen's Island and four miles and three-quarters **N.** by **E.** $\frac{1}{4}$ **E.** from Monhegan Light-house. About sixty yards from its southern end, in five fathoms at low water, is placed an iron can-buoy of the second class, painted black and marked No. 1. There is a good channel with nine fathoms to the northward of this ledge, between it and another dangerous ledge, called *The Old Woman*, which lies half a mile to the northward of The Old Man. It is dry at half-tide, has, near its southern extremity, three feet at mean low water, and is not buoyed. ***Old Man Ledge.***

After passing George's Islands there will be seen to the northward of the course, and about a mile and a half off, a black can-buoy. This is on the southeastern end of Old Cilley Ledge, an extensive and dangerous ledge a mile and a half to the northeastward of Burnt Island (the southeasternmost of the George's Islands) and dry at low water. It lies between the bearings of **S.** and **S SE.** from Hart's Island,—its eastern end, on which the buoy is placed, bearing **S.** from Marshall's Point Light-house, distant one mile and seven-eighths, and **S.** $\frac{3}{4}$ **W.** from the westernmost Gunning Rock, distant a mile and a quarter. It extends **W.** by **N.** and **E.** by **S.**, and about midway of its length is crossed by a very narrow channel with three fathoms water. The buoy, which is marked No. 3, is placed in eight fathoms about seventy-five yards to the eastward of the ledge, and is to be left to the northward by vessels using this channel. ***Old Cilley Ledge.***

When past the buoy on Old Cilley Ledge the first danger met with lies well to the southward of the course, and will be recognized by the red nun-buoy off its northwestern end. This is The Roaring Bull, sometimes called *Black Ledge*, and must be left to the southward by vessels using the northern passage and to the westward by those coming outside of Monhegan. From the southern end of Metinic Island it bears **W.** $\frac{1}{2}$ **N.**, distant three miles; from Burnt Island (the easternmost of George's Islands) **E.** by **S.** $\frac{1}{2}$ **S.**, three miles and three-quarters; and from Monhegan Light-house **NE.** by **E.**, seven miles and three-quarters. It is bare at extreme low tides, has deep water all around it, and is about two hundred and fifty yards long **N.** by **E.** and **S.** by **W.** The buoy is a nun of the second class, marked No. 4, and is placed in eight fathoms about one hundred yards to the northwestward of the dry part of the ledge. Vessels using the southern passage should pass about five-eighths of a mile to the eastward of this buoy. ***The Roaring Bull.***

When past The Roaring Bull, if standing to the eastward, do not approach Metinic Island nearer than a mile and a quarter, to avoid Black Rock, which lies on the western side of this passage, about a mile and a quarter **SE.** by **E.** from Hooper's Shoal, and is a bare, rocky islet, about two-thirds of a mile from the western shore of Metinic, and bold-to on all sides. From the southern end of Metinic it bears **NW.** by **N.** $\frac{1}{4}$ **N.**, a little over three-quarters of a mile distant, and from The Roaring Bull **E.** by **N.**, two miles and a half distant. There is a good passage on each side of it, and the channel between it and Hooper's Shoal is a mile and a quarter wide. Three-eighths of a mile **SW.** by **W.** $\frac{3}{4}$ **W.** from Black Rock is *a small kelp rock with fourteen feet at mean low water.* ***Black Rock.***

A little over a mile and three-quarters to the northeastward of The Roaring Bull lies Hooper's Shoal, a very small, detached rock, with seventeen feet at low water, which lies two miles to the westward of the Metinic Island shore. It is not buoyed, and the sailing-lines for the inshore passage pass half a mile to the northward of it, while those from outside Monhegan pass the same distance to the southward. ***Hooper's Shoal.***

Five-eighths of a mile to the northeastward of Hooper's Shoal, and two miles **W.** by **N.** from the northern end of Metinic Island, will be seen a spar-buoy painted red and black in horizontal stripes. This is off the western end of Metinic Island Ledge, with eight feet at mean low water, and from four to seven fathoms all around it. From White Head ***Metinic Island Ledge.***

Light-house it bears SW. ¾ S., distant five miles and a quarter, and from the northern end of Metinic W. by N., distant nearly two miles. The buoy is placed in five fathoms, and must be left to the southward by vessels using the inshore passage and to the northward by those coming from outside Monhegan.

Wheeler's Rock. Off the northern end of Metinic are several ledges with deep channels among them. The northernmost, known as Wheeler's Rock, is a third of a mile NE. by N. ½ N. from the northeastern point of Metinic, and has five feet at mean low water. A quarter of a mile SW. ¾ W. from this ledge is *Wheeler's Big Rock*, bare at half-tide; and there is a passage with three and three-quarter fathoms between them. Neither of these rocks is buoyed, and to avoid them vessels must not approach the northern end of Metinic nearer than half a mile.

Crow Island Ledges. When abreast of the northern end of Metinic Island the channel is three miles and a half wide and clear of all obstructions; but if beating to windward, do not stand farther to the northward than to bring Great Two-Bush Island to bear E. by N. ¾ N., in order to avoid the Crow Island Ledges, a group of dangerous detached rocks, four in number, with deep water between them, extending in a line about W. by S. ½ S. from Little Two-Bush Island a mile and an eighth. The westernmost of the ledges has eight feet at mean low water, and is marked by a red spar-buoy (No. 6) placed just to the westward of it in five fathoms. It is marked and numbered for the Muscle Ridge Channel; but vessels using the Two-Bush Channel pass to the southward of it. A little over three hundred yards to the northeastward of this outer ledge is another, with fifteen feet at mean low water; nearly a quarter of a mile to the northeastward of this is still another, with thirteen feet; and nearly eight hundred and fifty yards to the northeastward of this, and four hundred and fifty yards to the southwestward of Little Two-Bush Island, lies another, bare at extreme low tides. The bearing given above will avoid all of these ledges.

The Southern Triangles. When to the northward of Metinic Island do not stand too far to the eastward, in order to avoid The Southern Triangles and Alden's Rock. The former, which are all bare at low water, lie from two miles to two miles and a quarter to the eastward of the northern end of Metinic and are not buoyed. They are three distinct ledges, with deep water between them,—the two easternmost extending N. and S., and together covering an area half a mile long by an eighth of a mile in width;—the westernmost lying half a mile W. by S. from the dry part of the southern ledge, with a channel between them with from seven to eighteen fathoms. These ledges are bare at low spring tides and always break. The westernmost bears S. ½ E. from White Head Light-house, distant five miles and a half, and from the northern end of Metinic SE. by E. ¾ E., one mile and seven-eighths distant. The sailing-line passes well to the westward of them, and they are not usually noticed by vessels using this channel. A buoy has, however, been recommended to be placed on their eastern and western ends.

Alden's Rock. One mile and a quarter N. by E. ½ E. from the northern end of The Southern Triangles lies Alden's Rock, sometimes called *Bud Rock*, a pinnacle rock, with four feet at mean low water, which bears E. by N. ¾ N. from the northern end of Metinic, distant two miles and three-quarters; NW. ¾ W. from Little Green Island, distant one mile and three-eighths; and S. ¾ W. from Great Two-Bush Island, distant two miles and three-eighths. It is a very small rock, and has from seven to eleven fathoms on all sides of it. It is marked by a spar-buoy, painted red and black in horizontal stripes, placed on its southwestern side.

To avoid both of these ledges do not stand to the southward of the northeastern end of Metinic bearing SW. by W. ½ W.

The Northern Triangles. On the southern side of the channel, two miles and three-eighths SSE. from Great Two-Bush Island, are The Northern Triangles, a series of detatched ledges lying just to the northward of Little Green Island at an average distance of three-quarters of a mile. They are dry in places at low water, generally break heavily at half-tide, and lie E. by S. and W. by N.,—covering an area one mile and an eighth in length by three-eighths of a mile in breadth. They are marked by a black nun-buoy of the first class (No. 1), placed in ten fathoms ENE. from them. These ledges bear from the northern end of Metinic Island E. by N. ¼ N., nearly four miles distant; from the buoy on Alden's Rock E. ¾ N., one mile; and from the northwestern end of Outer Green Island NW. by N. ¾ N., one mile and seven-eighths distant. The Northern Triangles are not in the way of vessels using this passage unless they are standing to the southward on a wind, in which case, to avoid them, do not go farther than to bring the northern end of Metinic Island to bear W. by S. ¾ S., with the red buoy on Alden's Rock in range with it.

Two-Bush Reef. In passing Great Two-Bush Island, on the northern side of the passage, beware of Two-Bush Reef, a line of bare and sunken rocks extending from the island in a northeasterly direction for three-quarters of a mile. They are not buoyed, but are always visible and easily avoided.

Halibut Rock. A mile and a half NE. ¾ E. from Great Two-Bush Island, and a little over half a mile S. by E. from the southwestern end of Andrews' Island, lies Halibut Rock, a small detached ledge, bare at half-tide, and surrounded by deep water, varying from seven to twelve fathoms. It is not buoyed or marked in any way; but both it and *False Halibut Ledge* (which lies six hundred yards E. by N. ⅛ N. from it and has nine feet at low water) are easily avoided by not standing to the westward of Great Two-Bush Island bearing W SW.

Also, half a mile E. by N. $\frac{3}{4}$ N. from the northeastern end of Andrews' Island lies *Sunken Pond Ledge*, with six feet at low water,—the sailing-line passing about eight hundred yards to the eastward of it. It is not buoyed; but by not going to the westward of the eastern end of Fisherman's Island bearing N. $\frac{3}{4}$ E. it is easily avoided.

Northeastern Pond Ledge.

Northeastern Pond Ledge, bare at half-tide, lies four hundred yards N. $\frac{1}{4}$ W. from Sunken Pond Ledge and a little over half a mile S. by W. $\frac{3}{4}$ W. from Crescent Island. There is good water (from five to ten fathoms) between these ledges and Pond and Camp islands; but strangers should keep to the eastward. The bearing above given of the eastern end of Fisherman's Island will clear both ledges.

When past Crescent Island you are in the main channel, the dangers in which have been already described on pages 234–237.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING WEST PENOBSCOT BAY.

VI. ***From the Westward, by the Two-Bush Channel, passing to the Northward of Monhegan Island.***—Pass three miles to the northward of Monhegan Island and about seven-eighths of a mile to the southward of Burnt Island, (the southernmost of The Georges,) and steer E. by N. $\frac{3}{4}$ N. until the northern end of Metinic bears S. $\frac{1}{2}$ E., the middle of Little Green Island E. by S. $\frac{3}{4}$ S., and White Head Light-house N. by E. $\frac{5}{8}$ E.,—the latter being three miles and a half distant. Now steer NE. by E. $\frac{3}{4}$ E. through Two-Bush Channel, carrying not less than twelve fathoms, until the eastern end of Andrews' Island bears N. $\frac{5}{8}$ E., its western end is in range with the highest part of Dix Island, and the summit of Outer Green Island bears S. $\frac{1}{4}$ E. You are now fairly in the bay; and if intending to enter Hurricane Sound must steer E. by N. $\frac{3}{4}$ N., which will lead up to the western entrance; or, if bound into Fox Islands Thoroughfare, NE. $\frac{1}{2}$ N. must be steered until Brown's Head Light-house bears E NE. **Easterly**, distant three miles and an eighth, and the western extremity of Stand-in Point NE. $\frac{1}{4}$ N., distant nearly two miles and a quarter, when steer E. by N. $\frac{1}{4}$ N., and follow the directions for the Thoroughfare.

But, if bound up the bay: When the eastern extremity of Andrews' Island bears N. $\frac{5}{8}$ E. and the summit of Outer Green Island S. $\frac{1}{4}$ E., as before, steer NE. by N. $\frac{1}{8}$ N. until Owl's Head Light-house bears W. $\frac{1}{2}$ N., distant two miles and a half; Indian Island Light-house NW. by N. $\frac{3}{4}$ N., a little over five miles; and the middle of Mark Island N. by E. $\frac{1}{4}$ E., distant four miles and a quarter, when you will be nearly in line between Owl's Head and Stand-in Point, with Rockland Harbor fairly open. Now steer NE. $\frac{1}{2}$ N. **Northerly** if bound through the Middle Passage, or N. $\frac{3}{4}$ E. if bound up West Penobscot Bay; and follow in each case the directions given for those passages.

The above courses pass more than two miles to the northward of the whistling-buoy; two miles and a half to the northward of the beacon on Western Duck Rocks; two miles and three-eighths to the northward of the red buoy on Sunken Duck Rock; two miles and three-quarters to the northward of Eastern Duck Rock; three-eighths of a mile to the southward of the black buoy on Old Man Ledge; a mile and a quarter to the northward of the red buoy on the Roaring Bull; the same distance to the southward of the black buoy on the Old Cilley; half a mile to the northward of Hooper's Ledge; six hundred yards to the northward of Metinic Island Ledge; over a mile to the northward of Wheeler's Rock, and about the same distance to the northward of Wheeler's Big Rock; a mile and a half to the northward of Alden's or Bud Rock; about seven-eighths of a mile to the southward of Crow Island Ledges; nearly two miles to the northward of the Northern Triangles; half a mile to the southward of Two-Bush Reef; three-quarters of a mile to the eastward of Halibut Rock; half a mile to the eastward of Halibut Ledge; a mile and five-eighths to the westward of Junken's Ledge; nearly half a mile to the eastward of Sunken Pond Ledge; half a mile to the eastward of Northeastern Pond Ledge; five-eighths of a mile to the eastward of Crescent Island; over a mile to the eastward of Fisherman's Island; about a mile and a half to the westward of Inner Bay Ledges; and a mile and a quarter to the westward of Drunkard's Ledge. *On the course for Hurricane Sound;* you will pass four hundred yards to the northward of Junken's Ledge, and three-quarters of a mile to the northward of Perry's Ledge. *On the course for Fox Islands Thoroughfare;* you will pass a mile and three-eighths to the northwestward of Junken's Ledge; about three-quarters of a mile to the eastward of Sunken Pond Ledge; the same distance to the eastward of Northeastern Pond Ledge; a mile to the eastward of Crescent Island; a mile and five-eighths to the eastward of Fisherman's Island; and half a mile to the westward of Inner Bay Ledges.

DANGERS

IN APPROACHING AND ENTERING WEST PENOBSCOT BAY.

VI. ***From the Westward, through the Two-Bush Channel, passing outside or to the eastward of Monhegan.***—The first danger met with by vessels passing outside Monhegan is a ledge with three and three-quarter fathoms, called Gull Rock Ledge. This rock, which is small and detached, lies exactly one mile **S SE.** from Monhegan Light-house, with a passage between it and the island having from twenty to sixty fathoms in it. The ledge breaks heavily in winds from the southward or eastward, but in calm weather is hardly noticeable. Like Mile Ledge, off Seguin, it is dangerous to large vessels; and a buoy will be recommended to be placed upon it, so as to enable a navigator to pass on either side of it without risk.

Gull Rock Ledge.

When past Gull Rock Ledge, should there be much sea, you will be apt to see a breaker to the northward of the course and about a mile to the eastward of Black Head. This marks Allen's Shoal, another detached ledge, with five and a half fathoms on it and from twenty to forty fathoms between it and Monhegan. It lies about a mile **E.** $\frac{3}{4}$ **S.** from Green Point, (the northeastern end of the island;) the same distance **E.** $\frac{3}{4}$ **N.** from Black Head; and nearly two miles **NE.** $\frac{1}{4}$ **E.** from Gull Rock Ledge. In southerly and easterly gales we have seen it break with great violence.

Allen's Shoal.

Continuing to the northeastward there are no dangers after passing Allen's Shoal for nearly five miles, when you must look out, if standing to the eastward, for Haddock Ledge, with thirteen feet at low water, a detached rock, which lies two miles and a half **SW.** from Metinic Green Island and seven miles and a half **E.** by **N.** $\frac{1}{4}$ **N.** from Monhegan Light-house. From Southeast Breaker it bears **S.**, a mile and one-third distant, with an excellent channel between them. Vessels using this passage pass, however, well to the westward of this ledge.

Haddock Ledge.

Southeast Breaker is the next danger met with,—the channel passing exactly between it and The Roaring Bull. It lies on the eastern side, about a mile and three-quarters **SE.** $\frac{3}{4}$ **S.** from The Roaring Bull, and is very extensive, being about half a mile long **E NE.** and **W SW.** Part of it is dry at low water, and there are also many sunken rocks scattered over its surface, separated by small channels with about two fathoms water. From the southern end of Metinic Island it bears **SW.** by **W.** $\frac{3}{4}$ **W.**, two miles and a quarter distant, and from Monhegan Light-house **E NE.**, a little over seven and a half miles distant. It is not buoyed, and by vessels passing to the westward of Metinic is to be left to the southward and eastward. The sailing-lines pass over three-quarters of a mile to the westward of it.

Southeast Breaker.

The Roaring Bull lies on the western side of the passage; and between it and Southeast Breaker the channel is over a mile wide, with from six to twelve fathoms in it. The Roaring Bull, as before described, is sometimes called *Black Ledge*, and must be left to the westward by vessels using this passage. From the southern end of Metinic Island it bears **W.** $\frac{1}{2}$ **N.**, distant three miles; from Burnt Island (the easternmost of George's Islands) **E.** by **S.** $\frac{1}{2}$ **S.**, three miles and three-quarters; and from Monhegan Light-house **NE.** by **E.**, seven miles and three-quarters. It has deep water all around it, and is about two hundred and fifty yards long **N.** by **E.** and **S.** by **W.** A nun-buoy of the second class, marked No. 4, is placed in fifteen fathoms about one hundred yards to the northwestward of the dry part of the ledge. Vessels using this passage should pass about five-eighths of a mile to the eastward of this buoy.

The Roaring Bull.

When up with Southeast Breaker the course continues to the northeastward, and care must be taken to avoid *a dangerous breaker* to the southwestward of Metinic Green Island. This is a dry shoal an eighth of a mile **SW.** by **W.** $\frac{1}{2}$ **W.** from Metinic Green Island, and always shows itself, even at high water. It is not buoyed, but the sailing-lines pass well to the westward of it, and it is not dangerous unless you are standing to the eastward on a wind.

The western shore of Metinic Island is bold-to, and may be approached anywhere within three hundred and fifty yards with not less than five fathoms water; but two dangerous detached rocks lie nearly in the middle of the channel, of which strangers must beware. Of these ledges Black Rock is the most prominent and consequently the least dangerous. It is a bare, rocky islet, lying on the eastern side of this passage, about a mile and a quarter **SE.** by **E.** from Hooper's Shoal, about two-thirds of a mile from the western shore of Metinic, and is bold-to on all sides. From the southern end of Metinic it bears **NW.** by **N.** $\frac{1}{4}$ **N.**, a little over three-quarters of a mile distant, and from The Roaring Bull **E.** by **N.**, two miles and a half distant. There is a good passage on each side of it, and the channel between it and Hooper's Shoal is a mile and a quarter wide. Three-eighths of a mile **SW.** by **W.** $\frac{3}{4}$ **W.** from Black Rock is a small kelp rock with fourteen feet at mean low water, forming the second of the detached shoals mentioned above. To avoid this kelp ledge, which is commonly known as the *Fourteen Feet Spot*, it is well not to go to the eastward of White Head Light-house bearing **NE.** by **N.** $\frac{1}{2}$ **N.**

Black Rock.

Hooper's Shoal has been already described on page 243 as a very small, detached rock, with seventeen feet at low water, which lies a mile and three-quarters **NE.** from The Roaring Bull and two miles to the westward of the Metinic Island shore. It is not buoyed, and the sailing-lines for this passage pass three-eighths of a mile to the eastward of it and not to the westward, as those of the inside passage.

Hooper's Shoal.

A mile and a quarter **NW.** by **N.** ½ **N.** from Black Rock, and two-thirds of a mile **NE.** from Hooper's Shoal, lies Metinic Island Ledge, marked by a spar-buoy painted red and black in horizontal stripes. This ledge is left well to the westward by vessels using this entrance to Two-Bush Channel, and has been already described on pages 243–244 as a detached kelp ledge with eight feet at mean low water and from four to seven fathoms all around it. From White Head Light-house it bears **SW.** ¾ **S.**, distant five miles and a quarter, and from the northern end of Metinic **W.** by **N.**, distant nearly two miles. It must be borne in mind that this as well as the other dangers common to both channels west of Metinic have been already described under the inside passage, and are only repeated here because the sailing-lines pass them under different circumstances. When past Metinic Island Ledge both channels unite, and the dangers met with as far up as Owl's Head will be found described on pages 244–245. ***Metinic Island Ledge.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING WEST PENOBSCOT BAY.

VII. ***From the Westward, through Two-Bush Channel, outside of Monhegan.***—Pass a mile and a half outside of Lobster Point (the southwestern end of Monhegan) and steer **NE.** ¼ **E.**, passing between The Roaring Bull and Southeast Breaker and carrying not less than seven fathoms. On this course, when past Metinic, with its northern end bearing **S.** ¼ **E.**, the middle of Little Green Island **E.** by **S.** ¾ **S.**, and White Head Light-house **N.** by **E.** ⅝ **E.**, (the latter distant three miles and a half,) steer **NE.** by **E.** ¾ **E.** through Two-Bush Channel, and follow the directions given on page 245.

The above courses pass three-quarters of a mile to the eastward of Gull Rock Ledge; five-eighths of a mile to the eastward of Allen's Shoal; two miles to the westward of Haddock Ledge; over half a mile to the eastward of the red buoy on The Roaring Bull; three-quarters of a mile to the westward of the western end of Southeast Breaker; a mile and three-quarters to the westward of the breaker to the southwestward of Metinic Green Island; five-eighths of a mile to the westward of the Fourteen Feet Spot; half a mile to the eastward of Hooper's Shoal; about three-quarters of a mile to the westward of Black Rock; and about half a mile to the eastward of Metinic Island Ledge.

DANGERS

IN APPROACHING AND ENTERING WEST PENOBSCOT BAY.

VII. ***From the Westward, outside of Monhegan, by the passage between Metinic and the Green Islands.***—This channel being much obstructed by ledges (none of which are buoyed) is not recommended to strangers, and is seldom used. Passing to the southward of Monhegan the course leads in a nearly **E NE.** direction, leaving Gull Rock Ledge about a mile to the northward. This rock, which is small and detached, has three and three-quarter fathoms, lies exactly one mile **S SE.** from Monhegan Light-house, and breaks heavily in southerly and easterly winds. Like Mile Ledge (off Seguin) it is dangerous to large vessels, and a buoy will be recommended to be placed upon it. ***Gull Rock Ledge.***

When past Gull Rock Ledge, should there be much sea, you must look out, when standing to the northward, for Allen's Shoal, which has five and a half fathoms, and breaks heavily in southerly and easterly gales. From Green Point (the northeastern extremity of Monhegan) it bears **E.** ⅝ **S.**, distant about a mile; from Black Head **E.** ¾ **N.**, about the same distance; and from Gull Rock Ledge **NE.** ¼ **E.**, distant nearly two miles. ***Allen's Shoal.***

Continuing to the northeastward the course passes about three-quarters of a mile to the southward of Haddock Ledge, a detached rock, with thirteen feet at mean low water, which lies two miles and a half **SW.** from Metinic Green Island and seven miles and a half **E.** by **N.** ¼ **N.** from Monhegan Light-house. From Southeast Breaker it bears **S.**, a mile and one-third distant, and from Gull Rock Ledge **E NE.**, seven miles and three-eighths distant, and is the first danger met with after passing the latter. ***Haddock Ledge.***

Just to the northward of Haddock Ledge, distant about a mile and a quarter, lies Southeast Breaker, which is not, however, dangerous to vessels using this passage,—the course passing well to the southward of both it and Haddock Ledge. Southeast Breaker is a very dangerous as well as a very extensive shoal,—being about half a mile long **E NE.** and **W SW.**, and part of it dry at low water. There are also many sunken rocks scattered over its surface, separated by small channels with about two fathoms water. From the southern end of Metinic Island it bears **SW.** by **W.** ¾ **W.**, two miles and a quarter distant, and from Monhegan Light-house **E NE.**, a little over seven and a half miles distant. It is not buoyed, and by vessels passing to the eastward of Metinic is to be left to the northward and westward. ***Southeast Breaker.***

To the southwestward of Metinic Green Island lies *a dry shoal,* which is not buoyed, but always shows itself, even at high water. It lies an eighth of a mile **SW.** by **W.** ½ **W.** from the island, and the sailing-line passes three-quarters of a mile to the eastward of it.

The eastern shore of Metinic should not be closely approached, (although bold-to in many places,) as there are outlying ledges and sunken rocks dangerous to strangers. Of these the

Cat Ledge. most important is Cat Ledge, between six and seven hundred yards **N.** by **E.** ¼ **E.** from The Knubble and three hundred and fifty yards from the Metinic shore. It is not buoyed, but always shows itself, and is easily avoided.

Green Point Shoal, with three and three-quarter fathoms, lies nearly abreast of the middle of Metinic Island, distant from it about three-quarters of a mile. From the northern

Green Point Shoal. end of the island it bears **S SE. Easterly,** distant nearly one mile, and from the highest part of Hog Island **NE.** by **E.** ¼ **E.,** distant a mile and an eighth. It is not dangerous except in heavy weather or to large vessels, and the sailing-line passes to the eastward of it. But The Southern Triangles, on the eastern side of the passage, are extremely dangerous, and form, in fact, the principal obstruction to this passage. They are three distinct ledges, with deep water between them,—the two easternmost extending **N.** and **S.,** and together covering

The Southern Triangles. an area half a mile long by an eighth of a mile in width, and the westernmost lying half a mile **W.** by **S.** from the dry part of the southern ledge, with a channel between them with from seven to eighteen fathoms. These ledges are bare at low spring tides, and always break. The westernmost, which obstructs this channel, bears **S.** ½ **E.** from White Head Light-house, distant five miles and a half, and from the northern end of Metinic **SE.** by **E.** ¾ **E.,** one mile and seven-eighths distant. The sailing-line passes three-quarters of a mile to the westward of it.

The Southern Triangles are not buoyed, but buoys have been recommended to be placed on their eastern and western ends.

Wheeler's Rock. Off the northern end of Metinic are several ledges with deep channels among them. The northernmost, known as Wheeler's Rock, is a third of a mile **NE.** by **N.** ½ **N.** from the northeastern point of Metinic, and has five feet at mean low water. A quarter of a mile **SW.** ¾ **W.** from this ledge is *Wheeler's Big Rock,* bare at half-tide, and there is a passage with three and three-quarter fathoms between them. Neither of these rocks is buoyed, and to avoid them vessels must not approach the northern end of Metinic nearer than half a mile.

One mile and a quarter **N.** by **E.** ½ **E.** from the northern end of The Southern Triangles lies Alden's Rock, sometimes called *Bud Rock,* a pinnacle rock, with four feet at mean low

Alden's Rock. water, which bears **E.** by **N.** ¾ **N.** from the northern end of Metinic, distant two miles and three-quarters; **NW.** ¾ **W.** from Little Green Island, distant one mile and three-eighths; and **S.** ¾ **W.** from Great Two-Bush Island, distant two miles and three-eighths. It is a very small rock, and has from seven to eleven fathoms on all sides of it. It is marked by a spar-buoy, painted red and black in horizontal stripes, placed on its southwestern end.

In stretching to the eastward, as you come into the Two-Bush Channel, beware of The Northern Triangles, very dangerous ledges, which lie to the northward of Little Green Island at an average distance of three-quarters of a mile. They are a series of detached ledges to the north-

The Northern Triangles. ward of the island, which are dry in places at low water, and generally break heavily at half-tide. They lie **E.** by **S.** and **W.** by **N.,** covering a space one mile and one-eighth in length by three-eighths of a mile in breadth, and are marked by a nun-buoy (No. 1) of the first class, painted black, and placed in ten fathoms **E NE.** from them. These ledges bear from the northern end of Metinic Island **E.** by **N.** ¼ **N.,** nearly four miles distant, and from Great Two-Bush Island **SE.** by **S.** ¾ **S.,** two and a half miles distant. They are not in the way of vessels using this channel unless they are standing to the eastward on a wind.

Beyond The Northern Triangles this passage unites with the Two-Bush and Main channels, the dangers in which have been already described on pages 244–245.

SAILING DIRECTIONS

IN APPROACHING AND ENTERING WEST PENOBSCOT BAY.

VIII. ***From the Westward, outside of Monhegan, by the passage between Metinic and the Green Islands.***—Pass a mile and three-quarters to the southeastward of Monhegan and steer **NE.** by **E.** ⅛ **E.** until the highest part of Metinic Green Island bears **N NE.** and Marshall's Point Light-house **NW.** by **N.** ⅝ **N.,**—the latter being distant seven miles and three-quarters. Here you will have seventeen fathoms, and **NE.** ½ **N.** will lead safely through the channel and up the bay. On this course, when the eastern extremity of Andrews' Island bears **N.** ⅝ **E.,** distant nearly two miles, the highest part of Outer Green Island **S.** ¼ **E.,** distant nearly four miles and three-eighths, and the highest part of Dix Island is in range with the western end of Andrews' Island on a bearing of **N.** by **E.** ⅝ **E.,** steer **NE.** by **N.** ⅛ **N.,** and follow the directions for the Two-Bush Channel on page 245; or, continue

the **NE.** ½ **N.** course towards Stand-in Point until Owl's Head Light-house bears **NW.**, when steer **N.** ¾ **E.**, and follow the directions for the bay given on page 238.

The above courses pass a mile and an eighth to the eastward of Gull Rock Ledge; a mile and five-eighths to the eastward of Allen's Shoal; three-quarters of a mile to the eastward of Haddock Ledge; seven-eighths of a mile to the eastward of the breaker off Metinic Green Island; a quarter of a mile to the eastward of Green Point Shoal; nearly three-quarters of a mile to the westward of the westernmost of The Southern Triangles; nearly a mile and a quarter to the eastward of Wheeler's Rock; a quarter of a mile to the westward of Alden's Rock; and nearly a mile to the westward of the western end of The Northern Triangles.

DANGERS

IN APPROACHING AND ENTERING WEST PENOBSCOT BAY.

VIII. ***Through the Muscle Ridge Channel.***—This channel is the westernmost of the passages leading into the bay, and the one most commonly used by coasters coming from the westward. It is separated from the main channel by a line of islands, islets and bare ledges, which by breaking the force of the sea in easterly weather produce comparatively smooth water in this channel. The safe and comfortable anchorages afforded by the arms of the bay projecting into the mainland on the western side of the channel, and by the islands lying close along the shore, add to the great advantages possessed by this passage.

Beginning at White Head Island, the Muscle Ridge Channel extends to the northeastward to Owl's Head, a distance of seven miles and three-quarters, and is in many places narrow and full of shoals, but always affords beating-room for ordinary coasting-vessels, with plenty of water, and is comparatively well sheltered. The group of islands separating it from the main channel is known as the **Muscle Ridge Islands**, and has been already described on pages 224–227.

The guide for this channel is White Head Light-house; and, on nearing it, a black bell-buoy will be seen a little to the eastward of the course. This is on The South Breaker, a dangerous ledge, surrounding a small bare rock lying about eight hundred yards **S.** from White Head Light-house and almost directly in the track of vessels. The bell-buoy is moored in twelve fathoms water about a hundred yards from the southwestern point of the shoal; while to the eastward of it, and about thirty yards to the southwestward of the ledge, will be seen a red spar-buoy, marked No. 8, which is anchored in four fathoms water. ***The South Breaker.***

When past The South Breaker, look out for Yellow Ledge, which is marked by a red spindle with copper cylinder on top, and is out at one hour ebb. It lies on the southeastern side of the channel, bears from White Head Light-house **E.**, distant nearly half a mile, and is two hundred and fifty yards from the western shore of Yellow Ridge Island, with a very narrow channel between them. The channel has seven fathoms water, but is not recommended,—being only seventy-five yards wide. ***Yellow Ledge.***

From Yellow Ridge Island the shoal water extends to the northward two hundred, to the eastward three hundred, and to the westward two hundred yards, while its southern shore is comparatively bold-to.

Vessels using the eastern channel between Grafton and Yellow Ridge islands pass well to the eastward of The South Breaker and between it and Stallion Rock, a small bare ledge lying twelve hundred yards **W.** ½ **N.** from Crow Island. In using this channel care must be taken to avoid *a five feet shoal* lying on its western side,—not buoyed, but generally showing itself by breakers. It bears from Stallion Rock **NW.** ¾ **N.**, three-quarters of a mile distant; from the red buoy on The South Breaker **E.** by **N.** ½ **N.**, half a mile distant; and from White Head Light-house **SE.** ¾ **E.**, half a mile distant. ***Stallion Rock.***

The channel passes to the westward of Yellow Ledge;—the course leading to the northeastward, towards Hay Island Ledge, sometimes called *The Haycock*, which is marked by a black spar-buoy (No. 1) placed in eighteen feet water on its eastern side. This ledge has five feet at mean low water, bears from Seal Island **W.** by **N.**, three hundred yards distant, and between the two there is a channel with five fathoms, but too narrow and intricate for strangers. ***Hay Island Ledge.***

The sailing-line passes to the eastward of the buoy, between it and an iron can-buoy of the second class, painted red and black in horizontal stripes, marking the position of Lower Gangway Ledge,—being placed to the southwestward of it in five fathoms water. This ledge lies in mid-channel with from five to eight fathoms all around it, and may be passed on either hand; but the custom is to pass to the eastward of it, which renders the position of the buoy incorrect. It lies nine hundred yards **N NE.** from Yellow Ledge and eight hundred yards **E.** by **N.** from Seal Island. ***Lower Gangway Ledge.***

Four hundred yards **NW.** by **N.** ¼ **N.** from Lower Gangway Ledge will be seen a black spar-buoy. This is on the southern end of Burnt Island Ledge, and is one of the guides to Seal Harbor. This ledge lies two hundred and fifty yards **S.** from Burnt ***Burnt Island Ledge.***

Island and has four feet at mean low water. The buoy is placed in four fathoms on its southern end, is marked No. 3, and is to be left to the westward except by vessels bound into Seal Harbor, which pass to the southward of it.

Next to the northward of Burnt Island Ledge lies Hurricane Ledge, bare at low spring tides and with two feet at mean low water. From Spruce Head Island it bears **SE.** ¼ **E.**, distant eight hundred yards; from Hurricane Island **NW.** ½ **N.**, nearly half a mile; and from White Head Light-house **NE.** by **E.** ½ **E.**, a mile and a third distant. It lies in the middle of the channel, and is marked by a red spar-buoy (No. 2) placed in two fathoms on its northwestern side; and it is usual to pass to the westward of this buoy. A channel equally deep and less obstructed, however, will be found leading between Yellow Ridge and Grafton islands, and to the eastward of this ledge, between it and Hurricane Island. A spindle, painted red and black in horizontal stripes, which would enable vessels to use either channel with safety, should be placed here instead of the buoy.

Hurricane Ledge.

Next to the northward of Hurricane Ledge, and on the eastern side of the channel, will be seen a mass of rocks and ledges, called Clam Ledges, (all dry at low water and most of them at high water,)—forming a group of islets bare of all vegetation. The most westerly, as well as the largest of the group, is known as **Fogg's Island,** and is about one hundred yards in diameter. To the eastward of Fogg's Island the shoals appear as bare, rocky islets and breaking ledges, which form the northern boundary of that narrow and intricate channel which leads into the main channel of Penobscot Bay, having for its boundaries on the north and west these ledges and Dix, Birch and High islands; on the south and east, Hurricane, Hewell's, Andrews' and Pond islands.

Clam Ledges.

On the western side of the channel, nearly opposite the Clam Ledges, a black spar-buoy will be seen. This is on Garden Island Sunken Ledge, which has nine feet at mean low water, according to the Coast Survey chart; but it is reported that a pinnacle with but *five feet* exists. The ledge lies a quarter of a mile **S.** from Garden Island, leaving a very narrow channel with from six to seven fathoms between them. From the spindle on Garden Island Ledge it bears **SW.** by **S.**, distant eight hundred yards. The buoy is marked No. 5, and is placed in thirty feet on the southeastern side of the ledge, marking the western boundaries of the channel.

Garden Island Sunken Ledge.

Channel Rock, the next danger met with, lies on the eastern side of the channel, with deep water on all sides, and is a small, bare rock, surrounded by shoal water. The main channel passes to the westward of it; but there is a good passage with from five to six fathoms on its eastern side. It bears **SE.** from the spindle on Garden Island Ledge, a little over half a mile distant, which is here the width of the channel.

Channel Rock.

When up with Channel Rock the spindle on Garden Island Ledge will be seen to the northwestward. It is of iron, painted black, and surmounted by a copper cylinder and red ball, and lies three-quarters of a mile **W.** by **N.** from Oak Island and one-third of a mile **E.** by **N.** from Garden Island. This ledge is dry at low spring tides, and may be passed on either hand, although the best water is to the eastward. Between this ledge and Garden Island the channel is a quarter of a mile wide, and between it and Oak Island nearly three-quarters of a mile in width. There is a passage between Garden Island on the east and Tommy's Island on the west, with five fathoms water; but it is narrow and obstructed by ledges.

Garden Island Ledge.

Six hundred yards **NE.** ½ **E.** from Garden Island Ledge is a pinnacle rock, called *Wiggins' Rock,* with twelve feet at mean low water; and **N.** ¼ **E.** from Garden Island Ledge, distant three-quarters of a mile, lie the Lark Ledges, which are on the northwestern side of the channel, extend **N.** and **S.**, and are in several places dry at low water. The shoalest part of these ledges is near their southern end, and thence they extend to the northward four hundred yards. Their northern point bears **SE.** from the middle of Spaulding's Island, about four hundred yards distant; and between this northern point and the island three and a half fathoms can be carried, but the channel is narrow. Three hundred yards **SW.** by **S.** from the Lark Ledges is *a pinnacle rock with eight feet at mean low water.*

Lark Ledges.

The channel is nearly three-quarters of a mile wide between the Lark Ledges and Otter Island Ledge, which latter lies on the eastern side of the channel, immediately opposite to the former. It is a small, bare rock, between six and seven hundred yards **NW.** ½ **W.** from the northwestern end of Otter Island, and is marked by an iron spindle painted black, surmounted by a copper cylinder and two red balls. From eight to ten fathoms may be taken on either side of the ledge, but it is usual to pass to the westward of it. Both the ledge and the northwestern side of Otter Island are quite bold-to, and may be safely approached within less than one hundred yards by vessels drawing eighteen feet.

Otter Island Ledge.

Inner Grindstone Ledges are two ledges lying **N.** and **S.** from each other, two hundred and fifty yards apart. The northern one has eight feet at mean low water, the southern one has six feet at each end and is awash in the centre, and between the two a channel of from six to ten fathoms exists. On the northwestern end of the northern rock is placed a

Inner Grindstone Ledges.



Approaches to Muscle Ridge Channel from Muscongus Bay, Herring Gut Light House bearing N.E. by N.½N. distant 2 Miles



View from Muscle Ridge Channel, off Metinic Island, Whitehead Light bearing N.E.¼E distant 5¾ Miles

Thos. Sinclair Co. N.Y.

red spar-buoy (No. 4). Over ten fathoms can safely be taken between these ledges and the Upper Gangway; and between the lines of three fathoms the channel is a quarter of a mile wide.

Opposite to the buoy on Inner Grindstone Ledges, about a quarter of a mile distant in a **W.** ½ **S.** direction, will be seen a spar-buoy painted red and black in horizontal stripes. This is on Upper Gangway Ledge, which has eleven feet at mean low water and lies in mid-channel, though it is usual to pass to the northwestward of it. From Ash Island it is distant about three-eighths of a mile in a **SE.** direction,—the channel between them being about a quarter of a mile wide, with from four to ten fathoms at low water. The buoy is placed in six fathoms on the southwestern side of the rock, and may be passed on either hand by giving it a berth of half a cable's length. ***Upper Gangway Ledge.***

On the northwestern side of the channel, off the southwestern point of Ash Island, lies Ash Island Ledge, part of which is bare at low water. It makes off from the island in a southerly direction for three-eighths of a mile, and is marked by a black spar-buoy (No. 7) placed in six fathoms water about one hundred yards **SSE.** from the dry part of the ledge. On Ash Island Point is a large day beacon in the form of a tripod, fifty-seven feet high, with its legs painted white, and covered in from the top twenty-four feet down,—the covered part being painted brown. ***Ash Island Ledge.***

A dangerous rock, with eight feet at mean low water, lies to the southwestward of Sheep Island, distant half a mile, and from the beacon on Ash Island Point **NE.** ½ **E.**, distant one mile. It is called *Northwest Ledge*, and is marked by a red and black buoy.

Sheep Island Shoal is not, strictly speaking, in this passage, but on the northern side of Fisherman's Island Passage, extending off from Sheep Island to the southeastward, southward and southwestward. To the southward and southeastward it extends one-third of a mile, and to the southwestward three-eighths of a mile. There is only half a foot at mean low water a third of a mile **S.** of the southern end of the island. ***Sheep Island Shoal.***

On approaching Sheep Island from the southward a red can-buoy will be seen on the eastern side of the channel, about a quarter of a mile from the western shore of the island. This is on Sheep Island Bar, which extends off from the middle of the island in a westerly direction about a quarter of a mile and has four feet at low water. The buoy is a first-class iron can, marked No. 2, and is placed in thirty feet water on the western end of the ledge. From it the spindle on Dodge's Point Ledge bears **NE.** ¾ **N.**, distant a little over a mile and a quarter. ***Sheep Island Bar.***

Dodge's Point Ledge, which is marked by an iron spindle painted black and surmounted by a cage, is nearly bare at high water, and lies about two hundred and fifty yards to the eastward of Dodge's Point and on the northeastern side of Owl's Head Harbor. Dodge's Point may be known by the stone pier extending out from it,—the former site of one of the self-registering tide-gauges of the Coast Survey. ***Dodge's Point Ledge.***

When up with Dodge's Point Ledge a black can-buoy will be seen ahead and off the eastern point of Owl's Head. This is on Owl's Head Ledge, which makes off to the eastward from Owl's Head, is bare at low water and leaves no passage between it and the head. The buoy is a can of the second class, marked No. 1, and is placed in four fathoms about twenty yards to the eastward of the end of the ledge. Vessels must pass to the eastward of it and enter the bay,—this being the last danger in Muscle Ridge Channel. ***Owl's Head Ledge.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING WEST PENOBSCOT BAY.

IX. ***Through the Muscle Ridge Channel.***—Vessels coming from the southward pass about midway between Monhegan and George's Islands on a course about **E.** ½ **N.** until Monhegan Light-house bears **S.** by **W.** ½ **W.**, distant three miles, with thirty-one fathoms, rocky bottom. The course is then **NE.** by **E.**, passing two hundred yards to the westward of the bell-buoy near The South Breaker, three hundred yards to the eastward of White Head Light-house, and two hundred yards to the westward of the spindle on Yellow Ledge, until up with the red and black can-buoy on Lower Gangway Ledge, which you must leave to the westward about one hundred and fifty yards off, when there will be eight fathoms, hard bottom. Now steer **NE.** ¼ **E.**, passing to the westward of Hurricane Ledge buoy, to the eastward of the buoy on Garden Island Sunken Ledge and of the spindle on Garden Island Ledge, to the westward of Channel Rock, between Otter Island and the spindle on Otter Island Ledge, and to the eastward of Ash Island Ledge. When abreast of the eastern end of Ash Island, about three hundred yards distant, with eleven fathoms water, steer **N.** by **E.** ¾ **E.** to the southern entrance of Owl's Head Bay. On this course, when the southern end of Sheep Island bears **E SE.**, with nine fathoms, hard bottom, steer **NE.** through the bay. This course passes to the westward

Sailing Directions—Muscle Ridge Channel. of the red buoy on Sheep Island Bar, to the eastward of the spindle on Dodge's Point Ledge, to the eastward of Owl's Head Ledge, and leads safely into Penobscot Bay in a position to run for Rockland, Rockport, Camden or the Fox Islands, or to proceed up the bay.

If bound up West Penobscot Bay; when Owl's Head Light-house bears **W.** ¼ **N.**, distant six hundred and fifty yards, and Indian Island Light-house **N.** ⅛ **E.**, **NE.** by **N.** ½ **N.** will lead up to abreast of Negro Island Light-house; and when this latter bears **NW.** by **W.** ¾ **W.**, distant nearly two miles, steer **NE.** by **N.** and follow the directions for the bay. *If bound through the Middle Passage;* when Owl's Head Light-house bears **W.** ¼ **N.** and Indian Island Light-house **N.** ⅛ **E.**, as before, steer **NE.** ⅝ **E.** until Pendleton's Point bears **N.** ¾ **E.** and Dice's Head Light-house **NE.** ¾ **N.**, when steer **NE.** ½ **N. Northerly**, and follow the directions for this Passage. *If bound into Fox Islands Thoroughfare;* when, on the **NE.** course through Owl's Head Bay, you are exactly in line between Owl's Head and the northern end of Munroe Island,—the former bearing **NW.** by **N.** ½ **N.**, steer **E.** ¾ **S.**, which will lead to the entrance to the Thoroughfare. On this course, when Brown's Head Light-house bears **NE.** by **E.** ½ **E.**, distant a mile and a quarter, and Fiddler's Ledge Beacon **NW.** ¼ **N.**, distant nine hundred yards, steer **NE.** ⅝ **E.**, and follow the directions on page 216.

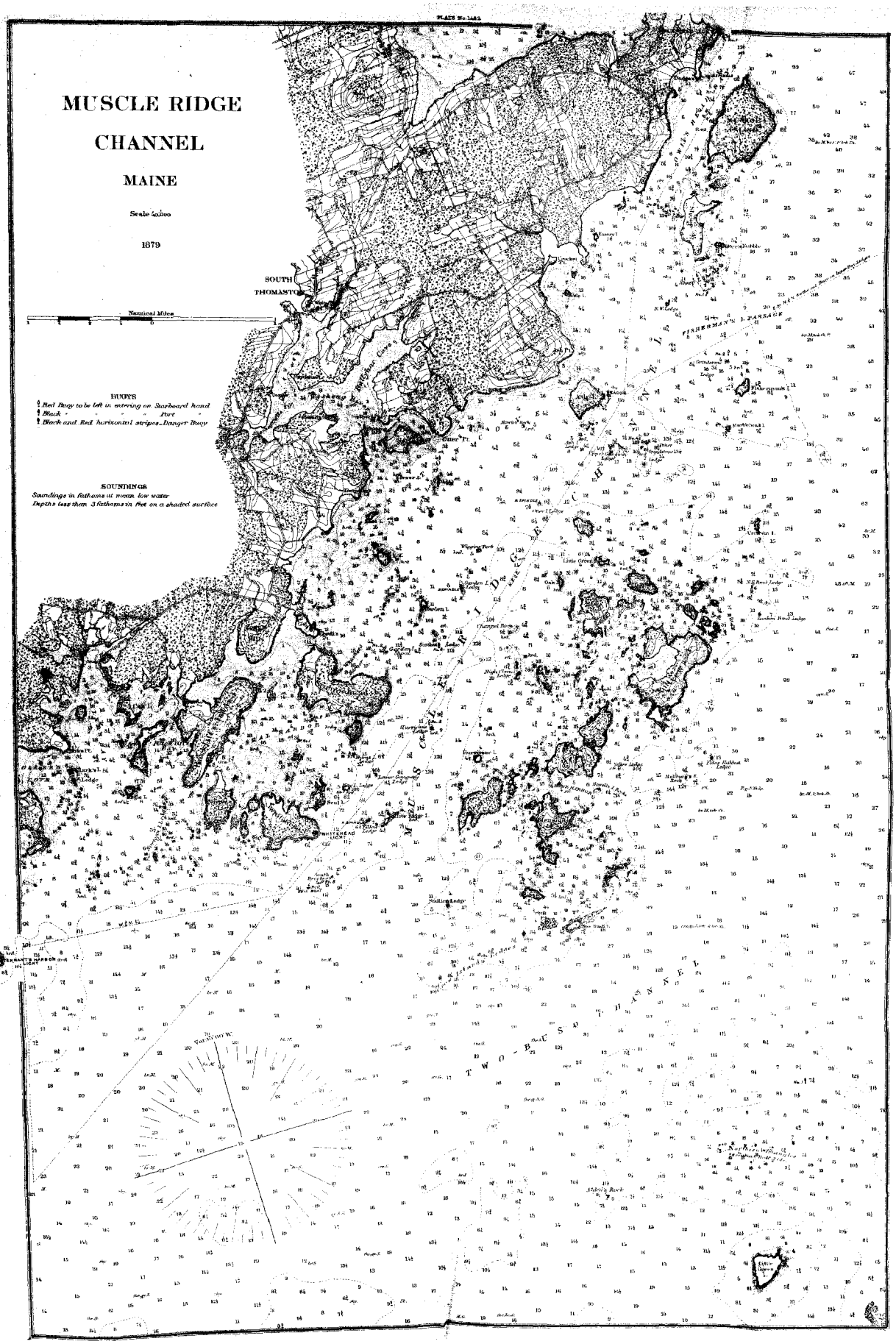
On the **E.** ½ **N.** course from Seguin there is not less than fifteen fathoms; on the **NE.** by **E.** course towards White Head, not less than six fathoms; on the **NE.** ¼ **E.** course, not less than six fathoms; on the **N.** by **E.** ¾ **E.** course, not less than eight fathoms; and on the **NE.** course, not less than five fathoms until past Owl's Head Ledge.

On the above courses, to enter Seal Harbor.—Continue the course by White Head, which you may pass close-to in from eight to twelve fathoms water, leaving the bell-buoy on The South Breaker about a hundred yards to the eastward until past White Head, when alter the course to **NE.** ½ **E.**, and continue it until past the red spindle on Yellow Ledge, which leave three hundred and fifty yards to the eastward and Hay Island Ledge to the westward two hundred yards. When within three hundred yards of the Lower Gangway buoy, with White Head Light-house bearing **SW.** by **W.** ½ **W.**, steer **NW.** by **N. Northerly**, into the harbor. Continue this course until between Long Ledge buoy and Spruce Head buoy, passing two hundred and fifty yards to the eastward of the former and one hundred and fifty yards to the westward of the latter. After passing these buoys, anchor in three and a quarter fathoms, soft bottom, and there will not be less than that water on any of the sailing-lines given above.

Coming from the Northward, to enter Seal Harbor.—Vessels coming through the Muscle Ridge Channel from the northward pass between Spruce Head Island and a small grassy island lying to the northward of Grafton Island, which is called **Hurricane Island.** (See page 227.) In so doing a red spar-buoy, marked No. 2, is passed to the southward,—the mid-channel line leading about a quarter of a mile from it. This buoy is on *Hurricane Ledge.* Now, if bound into Seal Harbor, when exactly between this buoy and Hurricane Island, in about fourteen fathoms, soft bottom, steer **W SW.** for seven-eighths of a mile, passing two hundred yards to the southward of the buoy on the Lower Gangway and carrying not less than seven fathoms water. When this buoy bears **N.** by **E.** ¼ **E.** and you are in about eight fathoms, steer **NW.** by **N. Northerly**, and follow the directions given above.

Coming from the Eastward through the Two-Bush Channel, to enter Seal Harbor.—Bring Tennant's Harbor Light-house to bear **NW.** by **W.** ¾ **W.** and steer for it, carrying not less than nine fathoms, passing five-eighths of a mile to the northward of The Northern Triangles and a quarter of a mile to the southward of Crow Island Ledges. Continue this course until White Head Light-house bears **N.** by **W.**, when there will be twenty-one fathoms, muddy bottom. Now steer **N.** ½ **W.**, passing a quarter of a mile to the eastward of the dry part of The South Breaker, about three hundred and fifty yards to the westward of the spindle on Yellow Ledge, and carrying not less than nine fathoms water. When White Head Light-house is abeam, bearing **W.** ¼ **S.**, with twelve fathoms, soft bottom, steer **NE.** by **N.** ½ **N.**, passing about a hundred yards to the eastward of the black buoy on Hay Island Ledge and carrying not less than seven fathoms. When well past this buoy, and in about five fathoms water, steer **NW.** by **N. Northerly**, and follow the direction given above.

Seal Harbor is used by coasters as an anchorage in head winds or gales, and also by vessels loading with granite from the quarries on Spruce Head Island. Good anchorage may be found, also, in Spruce Head and False White Head Harbor in southerly winds; off the mouth of Weskeag River or under the southern shore of Ash Island in northerly winds; and anywhere in Owl's Head Bay.


PLATE No. 1442
MUSCLE RIDGE
CHANNEL
MAINE
Scale 40,000
1879
Nautical Miles
BUOYS
Red Buoy to be left in entering on Starboard hand
Black - - - Port -
Black and Red horizontal stripes Danger Buoy
SOUNDINGS
Soundings in fathoms at mean low water
Depths less than 3 fathoms in feet on a shaded surface
SOUTH THOMASTON
MUSCLE RIDGE CHANNEL
TWO-BUSH CHANNEL
Whitehead Light
Two Bush Light
Marshall Point Light
Port Clyde
St. George's Harbor

DANGERS

IN ENTERING WEST PENOBSCOT BAY.

IX. ***From the Muscle Ridge Channel, through Fisherman's Island Passage.***—Vessels using this channel come through the Muscle Ridge Channel, but leave it when to the northward of Ash Island, passing to the eastward, between Sheep Island on the north and Fisherman's Island on the south, through a passage a mile and an eighth wide. Sheep Island, on the northern side of the channel, has been already described as a low island with sandy faces and nearly level surface, having its southern half wooded with stunted spruce and the northern half cleared. It is three-eighths of a mile to the southward of Munroe Island, (the northernmost of the Muscle Ridge Islands.) Fisherman's Island lies a little over a mile to the southward of Sheep Island, and is rocky, about forty-five feet high, with both ends bare, but dotted with a few stunted fir on its northern and eastern faces. ***Sheep and Fisherman's Islands.***

Not less than five fathoms at low water may be taken through the Fisherman's Island Passage; but it is obstructed by several dangerous ledges. Of these the first met with is Northwest Ledge, which is marked by a spar-buoy painted red and black in horizontal stripes. It bears from the southeastern end of Sheep Island **SW. ½ S.**, distant half a mile, and from the southwestern end of Fisherman's Island **N NW.**, seven-eighths of a mile. There is eight feet at low water on this ledge and good water all around it, but it is usual to pass to the southward of it. The buoy is placed on the southwestern side of the ledge in four fathoms water. ***Northwest Ledge.***

On the southern side of the passage will be seen a red spar-buoy to the northward of Fisherman's Island. This is on Grindstone Ledge, with six feet at low water. This is a detached ledge, extending in a **NE.** and **SW.** direction, at an average distance from Fisherman's Island of three hundred and fifty yards. From four to five fathoms may be taken between the ledge and Fisherman's Island, but the channel is not safe for strangers. The buoy, which is marked No. 2, is off the northeastern end of the ledge in four fathoms, and is left well to the southward by vessels using this passage. ***Grindstone Ledge.***

On the northern side of the channel, almost exactly opposite to Grindstone Ledge, will be seen a black spar-buoy. This is on the southern end of Sheep Island Shoal, a mass of rocks extending off from the southern end of Sheep Island for a third of a mile, with bare spots at low spring tides a quarter of a mile from shore. The buoy is marked No. 1, placed in six fathoms, and is to be left well to the northward. When past it you are in the bay, and may shape your course for Fox Islands Thoroughfare, the Middle Passage, or up the bay. ***Sheep Island Shoal.***

SAILING DIRECTIONS

FOR ENTERING WEST PENOBSCOT BAY.

X. ***From the Muscle Ridge Channel, through Fisherman's Island Passage.***—Continue the **NE. ¼ E.** course through the Muscle Ridge Channel (see page 251) until you are well past the tripod on the eastern end of Ash Island and about abreast of the middle of the entrance to the passage, with Ash Point bearing **W NW.**, Owl's Head Light-house **NE.** by **N. ½ N.**, and the southeastern end of Sheep Island is in range with the eastern extremity of Munroe Island on a bearing of **NE. Northerly.** Now steer **E.** by **N. ¼ N.**, which will lead, with not less than four and a half fathoms, safely through the passage; and, *if bound up the bay*, continue the course until the eastern end of Munroe Island bears **N.** by **E. ⅛ E.**, when steer **N NE. Easterly**, which will lead you up to a position off Camden Entrance, with Negro Island Light-house bearing **NW.** by **W. ¼ W.** Now steer **NE.** by **N.**, and follow the directions for the bay given on page 238. *If bound into the Middle Passage;* when, on the **E.** by **N. ¼ N.** course, the eastern end of Munroe Island bears **N.** by **E. ⅛ E.**, as before, steer **NE. ½ E.** until Owl's Head Light-house bears **W. ¼ N.** and Crabtree Point **E. ¼ N.**, when steer **NE. ½ N. Northerly** and follow the directions for this Passage. *Bound into Fox Islands Thoroughfare;* continue the **E.** by **N. ¼ N.** course across the bay (passing to the southward of the Whistling Buoy at the entrance to the Thoroughfare) until you are abreast of the red spindle on the northern end of Dogfish Ledges. On this course, when Brown's Head Light-house bears **NE.** by **E. ⅝ E.**, distant one mile and a quarter, steer **NE. ⅝ E.** through the Thoroughfare, and follow the directions on pages 216–217.

The course through the Fisherman's Island Passage passes seven hundred yards to the southward of the buoy on Northwest Ledge; six hundred yards to the northward of the red buoy on Grindstone Ledge; and a quarter of a mile to the southward of the black buoy on Sheep Island Shoal. The N NE. Easterly course up the bay passes four hundred and fifty yards to the eastward of the eastern end of Munroe Island, which latter is bold-to and may be approached closely without danger.

MIDDLE PASSAGE OF PENOBSCOT BAY.

This passage, which is in no place less than two miles wide, and is comparatively unobstructed, leads between North Haven Island and the line of islets and islands which extend in a southwesterly direction from the southeastern point of Long Island. The southernmost of these is a bare, rocky islet, known as Robinson's Rock, which lies a little over four miles and a half to the southwestward of Long Island, and is surrounded by bare and sunken ledges. With the shoal water around it, it occupies a space of about one thousand yards in a **N NE.** and **S SW.** direction, and may be approached from the westward to within an eighth of a mile; but in passing across its southern end it should receive a berth to the northward of one-third of a mile.

Robinson's Rock.

The north shore of North Haven Island begins at Stand-in Point, the northern point of the western entrance to Fox Islands Thoroughfare, and has a general direction about **NE.** by **E.** for nearly seven miles. There are several harbors on this side of the island, which have good water in them. Of these, the first above Stand-in Point is Wooster's Cove, which is about seven-eighths of a mile above that point, and has anchorage in about fifteen feet. Five-eighths of a mile to the northeastward of Wooster's Cove, and about one and five-eighths miles above Stand-in Point, is a small cove, with excellent water, called **Bartlett's Harbor**, in which anchorage may be had in from seven feet to seven fathoms; but it is obstructed by *a sunken rock, with nine feet at low water*, lying exactly in the middle of the entrance. This rock is small, bold-to, and may be passed on either hand in from seven to eight fathoms.

Wooster's Cove.

Nearly two miles to the northeastward of Bartlett's Harbor, and three and a half miles above Stand-in Point, is North Harbor, sometimes called **Pulpit Cove**, from the dry rock, known as **Pulpit Rock**, lying off the western point of entrance, but nearly in the middle of the passage. Not less than seven fathoms can be carried into this harbor by simply keeping the eastern shore somewhat the best aboard; and it affords excellent anchorage in from ten feet to seven fathoms. These northern shores of North Haven are of moderate height, with clumps of trees here and there on the slopes, undulating, and for the most part cleared, and thinly dotted with houses.

North Harbor.

Nearly two miles and a half to the eastward of North Harbor is Webster's Head, a steep, bluff, bare headland one hundred and twenty feet high; and a mile and five-eighths to the eastward of this is **Oak Hill**, the northeastern point of the island, a prominent headland, smooth, bare of trees, grassy, and one hundred and forty feet high.

Webster's Head.

On the northwestern side of the passage, about two-thirds of a mile to the northward of Robinson's Rock, will be seen a small rocky island with steep faces and wooded with fir. This is Mark Island. It lies **N NE.** and **S SW.**, is between five and six hundred yards long, and very bold-to on its western shore; and vessels may stand boldly to within one hundred yards of the island with four fathoms water. An excellent passage, with from twelve to fourteen fathoms water, exists between this island and Robinson's Rock. It is about seven hundred and fifty yards wide between the lines of three fathoms, is perfectly unobstructed, and may be safely used by strangers.

Mark Island.

To the northward of Mark Island, and between it and Lasell's Island, lie several bare and sunken ledges,—the most remarkable of which is the westernmost, which lies about eight hundred yards **N NE.** from Mark Island, and is called Goose Rock. It is a rocky islet, bare of all vegetation, and surrounded by shoal water, but may be approached from the westward within a hundred and seventy-five yards with seven fathoms water. From Negro Island Light-house (at the entrance to Camden) it bears **SE.** by **E.**, a little over three miles distant. To the southeastward, nearly a quarter of a mile, lies *a ledge, bare at low water;* to the northeastward, a little over a quarter of a mile, lies another; and between and among these ledges wind deep channels with from ten to seventeen fathoms water. Between Goose Rock and Mark Island there is a channel eight hundred yards wide, with from seven to thirteen fathoms, obstructed only by *a ledge, bare at low water*, which lies about a hundred and fifty yards to the northward of Mark Island. This channel may also be used by strangers, who need only keep in the middle to pass safely through with not less than nine fathoms.

Goose Rock.

Nearly three-quarters of a mile to the eastward of Mark Island, and about half a mile **S SW.** from Lasell's Island, lies Saddle Island, about a quarter of a mile long **N.** and **S.**, and thinly wooded. It receives its name from its saddle-like appearance, (when seen either from the eastward or westward,) which is that of two humps of equal height, with low land between them. It is quite bold-to, and may be approached from the eastward within an eighth of a mile with not less than five fathoms.

Saddle Island.

Five-eighths of a mile **E.** by **N.** ½ **N.** from Saddle Island lies Goose Island, a bare rock, but little over one hundred yards long, and surrounded by ledges. It is half a mile **SE.** ½ **S.** from the southern end of Lasell's Island, and between them there is an excellent passage, through which eleven fathoms at low water may be taken. Likewise, between this and Saddle Island there is a passage nearly half a mile wide, with from five to nine fathoms, and obstructed only by a single small shoal with eighteen feet upon it.

Goose Island.

Lasell's Island, lying about a mile and an eighth to the northeastward of Mark Island, is about twelve hundred yards long **N.** by **E.** and **S.** by **W.**, diversified with woods and cleared lands of moderate height, and bold-to. Its southern end is the highest, and is rocky, steep and wooded; while the northern end is composed of nearly level land, cleared and cultivated, has several houses upon it, and shows a steep, almost perpendicular, face to the westward. There is no passage between this island and Long Island, as a mass of shoals extends the whole distance, surrounding the various islands between them.

Lasell's Island.

Seven-eighths of a mile NE. ½ N. from Goose Island lies Mouse Island, also a bare, rocky islet, about an eighth of a mile long N NE. and S SW., and twenty feet high at its southern end. Between it and Goose Island are many bare and sunken ledges, so that, although there is deep water between the ledges, no stranger should attempt to pass through. **Mouse Island.**

In fact there is an excellent and unobstructed passage, suitable for vessels of the largest draught, beginning between Robinson's Rock and Mark Island, leading to the northeastward between Saddle Island and Goose Rock, thence between Goose Island and Lasell's Island, and finally joining the main passage after passing between Mouse Island and Lime Island. The latter lies about an eighth of a mile to the northeastward of Lasell's Island, and is a small, low, sandy island, about two hundred yards long, and pretty thickly wooded; and about two-thirds of a mile to the northeastward of this lies Job's Island, which marks the eastern point of the southern entrance to Gilkey's Harbor. It is a little over a mile and a half long NE. and SW., and when seen from the southward and westward appears rather low, wooded, and faced by a white sand beach. The eastern side of the island is, however, steep and rocky. Between Job's and Lime islands there extends a line of ledges for the most part bare at low water; and the western shore of the former is shoal and should not be approached within less than three hundred and fifty yards. Between this island and Pendleton's Point is a shallow passage leading into Gilkey's Harbor. **Lime and Job's Islands.**

Pendleton's Point is the southern extremity of Long Island, and has already been mentioned on page 200. Seen from the southward it will appear low, gently sloping and wooded; but there are several clearings on its eastern face. Nearly two miles to the northward of it the eastern shore of Long Island is penetrated by a small, shallow cove, called **Dark Cove**, which, extending to the westward about six hundred yards, nearly joins Ames' Cove, in Gilkey's Harbor. It is of no importance. **Pendleton's Point.**

A mile and three-eighths to the northward of Dark Cove is another small and unimportant cove, called **Pendleton's Cove**; and a mile and a quarter to the northward of this is Hughes' Point, the southern point of entrance to Bounty Cove, and showing as a steep, rocky, wooded headland one hundred and thirty feet high. All of this shore is undulating, (the heights varying from fifty to one hundred and forty feet,) and shows alternate cleared and wooded lands. It is bold-to, and may be approached anywhere, with not less than six fathoms, within one hundred and fifty yards. **Hughes' Point.**

Above Hughes' Point the eastern shore of Long Island has been already described on pages 200–201, (which see.)

On the eastern side of the Middle Passage, and to the northward of North Haven, we find portions of that large group separating it from East Penobscot Bay. Of these many have been described under East Penobscot Bay; but of those which specially pertain to this passage but few have been mentioned. A vessel passing up towards Castine will notice only five or six islands between North Haven and Cape Rosier, meeting first with Compass Island, then Grass Ledge, Little Spruce Head Island, Horse Head and Mark islands, and, if standing to the eastward on a wind, Colt Head, the Barred Islands and Western Island; but there are many more, which, although not apt to be noticed by strangers, merit at least a mention in this connection.

Burnt Island, the southernmost, is about six hundred yards to the eastward of Oak Hill, and is of moderate height and thinly wooded. There is no safe passage between it and Oak Hill. Four hundred yards to the northward of it, and nearly half a mile from Oak Hill, lies **Oak Island**, about twenty feet high, and grassy. Between it and Burnt Island is an unobstructed passage with not less than seven fathoms. **Burnt Island.**

About eight hundred yards NW. by N. from the northern end of Oak Island, and seven-eighths of a mile to the northward of Oak Hill, is a bare rock, about one hundred yards in diameter, called **Spoon Ledge**. Nearly three-quarters of a mile to the eastward of it lies Sloop Island, another bare, rocky islet; and midway between this and Eagle Island lies **Fling Island**, a quarter of a mile long E NE. and W SW., of moderate height and thinly wooded. **Sloop Island.**

Bare Island, which is not bare, lies nearly a mile to the northward of Spoon Ledge, and at low spring tides is joined to Great Spruce Head Island by a line of bare ledges about a quarter of a mile long. It is of irregular shape, about five-eighths of a mile long, undulating,—the heights varying from ten to sixty feet,—has steep faces from ten to twenty feet high, and is wooded at its southwestern and northeastern ends. There are, however, but few trees at the former end,—nearly all of the southern half of the island and a portion of the northern half being cleared, partly cultivated, and showing a few small houses. Three-eighths of a mile to the westward is **Scrag Island**, low, rocky, bare of trees, and about two hundred yards in diameter. While there is deep water among all these islands, it is not safe to attempt the passages between them without a pilot. **Bare Island.**

Over three-quarters of a mile W NW. from the southern end of Bare Island lies Grass Ledge, a rock bare of trees, covered with grass, and about one hundred and fifty yards in diameter. It is surrounded by ledges, most of which are bare at half-tide, but is not dangerous to vessels using the Middle Passage unless they are standing to the eastward on a wind. **Grass Ledge.**

Compass Island, the southernmost of the islets met with on the eastern side of the Middle Passage, lies nearly two miles N. by W. from Webster's Head and two miles and three-quarters SE. by E. from Pendleton's Point. It is about four hundred yards long NE. and SW., forty feet high at its highest point, and bare of trees except for two or three on its eastern side, a lone fir on its southern end and another on its western side. Grass Ledge is five-eighths of a mile to the eastward of it, and Little Spruce Head Island nearly a mile to the northeastward. **Compass Island.**

Little Spruce Head Island is a remarkable looking islet, about three-eighths of a mile long **N.** ¼ **E.** and **S.** ¼ **W.**, with a steep bluff head one hundred feet high at its northern end. A thin fringe of woods lines the base of the head.

Horse Head Island lies a little over a mile **W.** by **S.** from Beach Island, about five-eighths of a mile **N.** by **E.** ½ **E.** from Little Spruce Head Island, and nearly two-thirds of a mile to the southwestward of Colt Head. It is easily recognized as the only densely wooded islet in the vicinity,—being about forty feet high and covered with a very thick growth of fir and spruce.

Colt Head Island is a small, rocky island, about forty feet high, bare of trees, and lies nearly half a mile to the westward of Beach Island. It is three hundred yards long, and lies nearly **N.** and **S.**

Mark Island, the northernmost as well as the westernmost of this group, is about three-quarters of a mile to the westward of Colt Head, nearly a mile and a third to the westward of Beach Island, and five-eighths of a mile to the northwestward of Horse Head. It lies **N NE.** and **S SW.**, is between seven and eight hundred yards long and sixty feet high, and is thinly wooded near the shore but bare on the summit. On the eastern and western sides it presents precipitous faces twenty feet high. A good channel, with deep water, (ten to fifteen fathoms,) here leads from East Penobscot Bay into the Middle Passage, leaving Beach Island and Horse Head on the north and Great Spruce and Little Spruce islands on the south. It is excellent and safe,—being entirely unobstructed.

Mark Island.

A vessel passing up towards Castine will, when just past Little Spruce Head Island, perceive to the eastward a large, irregularly shaped island, called Great Spruce Head Island. It extends about **NE.** by **N.** and **SW.** by **S.**, and its northern head (which is the most prominent) is composed entirely of bare, white rocks, rising to a height of two hundred and fifty feet. It is the highest land in the vicinity, and presents quite a remarkable appearance. The eastern slopes of the island (which are not seen from the Middle Passage) are partly wooded and partly cleared, and are much lower than the northwestern head,—being not more than eighty feet high.

Great Spruce Head Island.

Beach Island, seven-eighths of a mile to the northward of Great Spruce Head and nearly half a mile to the eastward of Colt Head, lies **W NW.** and **E SE.**, is about eleven hundred yards long, of irregular shape, and bare of trees with the exception of a very few on the low land between its eastern and western heads and a small growth on the northern slopes of the western head, which latter rises to a height of sixty feet. There are two or three houses on its eastern side near the beach.

Beach Island.

On the eastern side of the channel, between five and six hundred yards to the northward of Beach Island, lie the Barred Islands, two rocky islets with a few fir trees upon them, and joined at low water. They lie **E.** and **W.** from each other, about one hundred yards apart. The easternmost is about one hundred and fifty yards long **N.** and **S.**, the other three hundred yards long **E.** and **W.** They mark the point of junction between the Middle Passage and East Penobscot Bay;—the passage between them and Western Island being a mile and three-eighths wide.

Barred Islands.

On the eastern side of the channel, and about one mile and a half to the northward of Barred Islands, lies Western Island, a rocky islet, quite low on its eastern end, but rising to a steep hillock about twenty feet high at its northwestern end. It is partly wooded with the usual growth of spruce and fir, and has a house nearly midway between its eastern and western ends. A bare rock, about one hundred yards in diameter, lying about an eighth of a mile to the westward of it, is called **Green Ledge.** The high, wooded land seen just to the northward of Western Island is **Cape Rosier,**—the northern point of the western entrance to Eggemoggin Reach.

Western Island.

As before remarked, the main channel of East Penobscot Bay passes between Western Island and the Barred Islands and joins the Middle Passage; and thence both proceed together in one wide and deep channel to the mouth of Penobscot River. The shores on both sides will be found described on pages 200–201, under East Penobscot Bay.

DANGERS

IN THE MIDDLE PASSAGE OF PENOBSCOT BAY.

As before remarked, this passage is almost entirely unobstructed,—the dangers which exist in it lying well clear of the sailing-lines, and consequently not in the way of vessels unless they are beating to windward. The course usually pursued by those intending to enter the Middle Passage from West Penobscot Bay is to bring Owl's Head Light-house to bear **W.** ¼ **N.** and Crabtree Point (the northern point of the western entrance to Fox Islands Thoroughfare) **E.** ¼ **N.**, and steer **NE.** ½ **N. Northerly.** On this course there are no dangers; but if standing to the eastward towards Stand-in Point, beware of Drunkard's Ledge, which is bare at half-tide, and lies about five-eighths of a mile **SW.** by **W.** ¼ **W.** from Stand-in Point, and **W.** by **N.** ½ **N.** from the beacon on Fiddler's Ledge nearly the same distance. An iron spindle painted black, and surmounted by a cage, is placed on top of the rock, and must receive a berth of three hundred and fifty yards. There is a passage with from four to eight fathoms inside this ledge, but it is not safe for strangers.

Drunkard's Ledge.

The Middle Passage at its western entrance is nearly four miles wide, and the channel itself almost entirely unobstructed. On the northern side, however, there are outlying ledges and rocks off the small islands to the southward and westward of Long Island, none of which are buoyed and scarcely any of them marked. Of these the first met with is Robinson's Rock, (see pages 230 and 254,) a small, bare, rocky island, the southernmost of the group **SW.** from Long Island, and forming the northern point of entrance to this passage. It lies

Robinson's Rock.

N. and S., and is only about one hundred and fifty yards long; but dangerous shoals extend to the northward and southward of it, and also to the northeastward, so that it is not safe to approach it closely. A ledge with eight feet at low water lies about four hundred and fifty yards SSW. from the rock, and another, which is bare, lies about six hundred yards to the northeastward of its northern end. The general name, Robinson's Ledges, is given to all of these, and there is deep water (from seven to thirteen fathoms) to the northward, between them and Mark and Saddle islands. They are not buoyed, however, and should not be approached by strangers. ***Robinson's Ledges.***

There are also deep channels among the small islands lying to the southward of Long Island, through which from seven to fourteen fathoms may be carried with safety by those who are acquainted; but these passages are not recommended to strangers except in case of necessity.

A very dangerous pinnacle rock, known as McIntosh's Ledge, awash at low spring tides, lies about fifteen hundred yards to the eastward of Robinson's Rock, bearing about SE. by E. $\frac{1}{8}$ E. from the dry part of the ledge. It is surrounded by deep water, is very small and bold-to, and not less than fifteen fathoms can be taken between it and Robinson's Rock through a channel two-thirds of a mile in width. A second-class iron nun-buoy, painted red and black in horizontal stripes, is placed in six fathoms just to the southwestward of the rock. ***McIntosh's Ledge.***

When past McIntosh's Ledge there are no dangers in the passage,—it being only necessary not to approach too closely the small rocky islands and bare rocks lying to the southwestward of Long Island, and to look out for Egg Rock, which lies on the eastern side about one mile and three-eighths from the northern shore of North Haven, and bears from the entrance to North Harbor N. by E. $\frac{1}{4}$ E., distant nearly two miles. It is a small rock, out at low water, and surrounded by deep water, (from five to eight fathoms;) and there is a sunken ledge, called *Egg Rock Ledge*, with five feet, about six hundred yards SSW. from it. Neither of these rocks is buoyed; but in fresh weather they will generally show by breakers. ***Egg Rock.***

It may be mentioned that it would be well, if standing to the westward on a wind, (when to the northward of Saddle Island bearing W. by N.,) not to go farther than to bring Pendleton's Point to bear NE. by N. $\frac{1}{4}$ N.,—thus avoiding *the detached bare and sunken ledges* lying to the eastward and northeastward of Goose Island and to the northward and southward of Mouse Island. The entire space, in fact, between these two islands is occupied mostly by dangerous shoals, and no stranger should, when in their vicinity, attempt to pass to the westward of Pendleton's Point bearing NE. by N. $\frac{1}{4}$ N. After passing Mouse Island the western side of the passage is clear of all danger as far up as Hughes' Point.

On the eastern side of the passage, after passing Egg Rock, vessels should not stand farther to the eastward than Compass Island bearing N. $\frac{1}{2}$ E., by which means they will avoid Compass Island Ledge, a small, detached, rocky shoal, about one hundred and fifty yards in diameter, with eight feet upon it at mean low water. It lies almost directly in line between Webster's Head and Compass Island, and nearly midway between the two,—bearing from the former N. by W. $\frac{3}{8}$ W., distant a little over one mile, and from the latter S. $\frac{1}{4}$ E., about seven-eighths of a mile distant. The sailing-line passes well to the westward of it. ***Compass Island Ledge.***

It may be mentioned in this connection that the northeastern end of Compass Island is shoal,—a long reef making off from it for about four hundred yards, with a rock bare at low water upon its northern end. Strangers would do well not to go to the eastward of a line between little Spruce Head Island and Compass Island,—thus avoiding **Grass Ledge** and the dangerous shoals which surround it.

These are all the dangers met with in the Middle Passage, and vessels may stand safely from side to side until past Mark Island and in East Penobscot Bay,—the dangers in which have been already described on page 204. It may be remarked, however, that about five hundred yards to the northeastward of Hughes' Point lie two rocks close together and awash at low water, called *Hughes' Ledge*. They are not dangerous unless you are standing to the westward on a wind or bound into Bounty Cove; and to avoid them it is only necessary to give the point a berth to the westward or southward of not less than three-eighths of a mile.

SAILING DIRECTIONS

FOR THE MIDDLE PASSAGE OF PENOBSCOT BAY.

On the N. $\frac{1}{4}$ E. course up West Penobscot Bay, when Owl's Head Light-house bears W. $\frac{1}{4}$ N., distant nearly two miles and a half, Robinson's Rock NNE., a little over three miles and a half, and Crab-tree Point (the northern point of the western entrance to Fox Islands Thoroughfare) E. $\frac{1}{4}$ N., distant two miles and an eighth, you will have forty-four fathoms, and must steer NE. $\frac{1}{2}$ N. Northerly, which will lead safely through the passage into East Penobscot Bay, carrying not less than twenty-three fathoms water. On this course, when Dice's Head Light-house bears NE. by N. $\frac{3}{8}$ N., distant three miles and an eighth, and the middle of Hutchinson's Island (in Parker's Cove, on the North

Sailing Directions—Middle Passage of Penobscot Bay. Islesboro' shore) **NW.** by **N.** $\frac{3}{8}$ **N.**, distant nearly one mile and seven-eighths, steer **N.** by **E.** $\frac{1}{4}$ **E.**, and follow the directions for East Penobscot Bay given on pages 204–205. *Or*, on the **NE.** $\frac{1}{2}$ **N. Northerly** course through the passage, when Pendleton's Point bears **W.** $\frac{3}{4}$ **N.** and the highest part of Mark Island **NE.** by **E.** $\frac{1}{2}$ **E.**, steer **NE.** by **N.** $\frac{1}{4}$ **N.**, which will lead up to a position off Castine Entrance, joining the **N.** by **E.** $\frac{1}{4}$ **E.** course up East Penobscot Bay.

The above courses pass about a mile and a quarter to the westward of Drunkard's Ledge; nearly half a mile to the eastward of McIntosh's Ledge; about the same distance to the eastward of the shoals lying off Goose and Mouse islands; a mile and five-eighths to the westward of Egg Rock Ledge; the same distance to the westward of Egg Rock; two miles and a half to the westward of Compass Island Ledge; and one mile and seven-eighths to the westward of Compass Island.

On the above courses, to enter Bartlett's Harbor.—The only danger in the approach to this anchorage is *a nine feet spot* lying exactly in the middle of the entrance. It is easily avoided by keeping either the northern or southern shore of the harbor best aboard,—both of which are bold-to, and the latter especially so. To enter this harbor, when, on the **NE.** $\frac{1}{2}$ **N. Northerly** course through the passage, Robinson's Rock bears **N.** $\frac{1}{2}$ **E.** and Stand-in Point **SE.** $\frac{7}{8}$ **S.**, steer **E.** $\frac{1}{4}$ **N.** into the harbor, and anchor in from twelve feet to six fathoms, according to draught. This course passes about one hundred yards to the southward of the nine feet spot.

On the above courses, to enter North Harbor.—Bring Robinson's Rock to bear **W.** by **N.** $\frac{1}{4}$ **N.** and steer **E.** by **S.** $\frac{1}{4}$ **S.**, which will lead safely up to the entrance. Round Pulpit Rock at a distance of about two hundred yards and steer boldly into the harbor, passing about midway between the two shores. When fairly in, anchor at pleasure. Both shores are bold-to, and there are no dangers, with the exception of *a ten feet spot* near the head of the harbor and exactly in the middle. Keep either shore aboard to avoid it.

HARBORS IN WEST PENOBSCOT BAY.

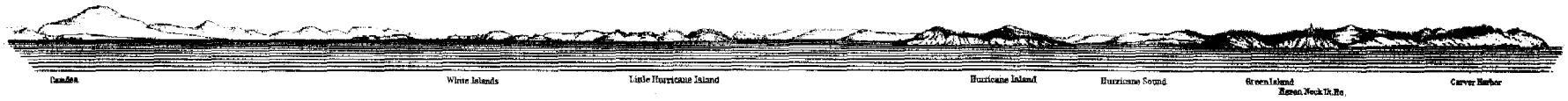
Many excellent harbors lie on both sides of this bay, most of which afford good shelter and anchorage, and are nearly all easy of access, even for strangers. A detailed description of each, together with its dangers, and complete sailing directions, will be given for the guidance of those who may not be acquainted. The most important of these harbors are, beginning with the southernmost, Carver's Harbor, which penetrates the southwestern end of Vinal Haven Island to the eastward of Green Island, and is the most difficult of access for strangers, though pretty well buoyed; Hurricane Sound, lying just to the northward of Carver's Harbor, and contained between Vinal Haven and the White islands; Rockland Harbor, on the western shore of the bay, making in on the northern side of Owl's Head; Rockport Harbor, also on the western shore, about three miles above Rockland Entrance; Camden Harbor, at the foot of Camden Hills, two miles and a half to the northward of Rockport; Gilkey's Harbor, on the eastern side of the bay, contained between the southwestern side of South Islesboro' and Seven Hundred Acre Island; Duck Trap Harbor, on the western shore, nearly opposite to Gilkey's, and about five miles and a half above Camden Entrance; Seal Harbor, at the southwestern end of North Islesboro', and nearly opposite to Great Spruce Head on the western shore; and, finally, Belfast Harbor, at the head of Belfast Bay. There are several other harbors in the bay, of more or less importance, which will be found described in place.

CARVER'S HARBOR

is formed by a cove of irregular shape, which penetrates the southwestern shore of Vinal Haven Island in a **NNE.** and **SSW.** direction, and is about five-eighths of a mile long. It is not a very good harbor under any circumstances, and the approach to it is so obstructed by ledges and sunken rocks (few of which are buoyed) that strangers are not advised to attempt to enter it unless compelled by necessity. There is a small settlement here, occupying both shores of the cove;—the principal industry being fishing and the working of stone-quarries in the neighborhood. The land in this vicinity is for the most part barren and rocky, with an occasional sickly growth of fir and spruce, and the approaches present a peculiarly forbidding appearance.

Lane's Island. The approach to the harbor lies between the southern extremity of Lane's Island on the east and the southeastern end of Green Island on the west, and is about three-quarters of a mile wide,—the available channel, however, being not quite four hundred yards between the lines of three fathoms. Lane's Island is extremely irregular in shape, half a mile long **N.** and **S.**, and lies close in with the Vinal Haven shore, from which it is separated by **Indian Creek**, about two hundred yards wide, but shallow. The island is almost entirely bare of trees, undulating and of moderate height,—being in no place higher than sixty feet. It is grassy, partly cultivated, and has several houses on its western side.

Green Island. Green Island, on the western side of the approach, has been already described on page 220 as of irregular shape, lying nearly **N.** and **S.**, and about a mile and a half long. It is of moderate height and for the most part wooded, though there are occasional houses and cleared fields; and is separated from Vinal Haven by a passage called **The Reach**, two hundred and fifty yards wide in its narrowest part, but full of ledges and entirely unsafe. On



Entrance to Carver Harbor and Hurricane Sound, Heron Neck Lt. Ho. bearing N. E. by E. distant 3¼ Miles

the southern side of the island there is a cove, about three-eighths of a mile in length, called **Deep Cove**, making in on the eastern side of Heron Neck, between it and the southeastern point of the island. In this cove four fathoms can be found at low water, and it affords good shelter in northerly winds. Green Island is also sometimes called **Heron Neck Island**, from **Heron Neck**, its southwestern end, on which is built Heron Neck Light-house, which is the guide to this harbor. The light-house is a brick tower of the natural color, twenty-four feet high, and shows a fixed red light, of the fifth order of Fresnel, from a height of ninety-two feet above the sea, visible fourteen miles. The keeper's dwelling, to which it is attached, is also of brick, whitewashed. The geographical position of this light is

Heron Neck Light-house.

Latitude ..... 44° 1′ 30″ N.
Longitude ..... 68° 51′ 43″ W.,

and it bears from Matinicus Rock Light-houses **N.** by **E.** ¼ **E.**, distant about fourteen miles and three-quarters.

The eastern shore of Green Island is indented by three narrow coves, all of which afford anchorage to small craft, but none are fit for strangers. A bare rock, called Folly Ledge, lies four hundred yards to the eastward of the south-eastern end of the island; and an islet about fifty yards in diameter and surrounded by half-tide ledges lies almost exactly in the middle of the passage, whether you are bound into the harbor or through The Reach. This islet is called Green Ledge; and the usual channel passes to the westward of it, although a narrow and crooked slue leads between it and Lane's Island.

Folly and Green Ledges.

On the northern side of the eastern entrance to The Reach, and on the western side of the Inner Harbor, is Norton's Point, about sixty feet high and wooded on top. There are two or three houses on its eastern side; and near the shore it is cleared and grassy. It must receive a good berth,—not less than three hundred and fifty yards,—on account of the dangerous ledges extending from it. On its northern side makes in **Sand Cove**, running nearly **N.** and **S.** and three-eighths of a mile long, with a depth of seven feet at the anchorage. The northern point of entrance to this cove, called Dodge's Point, is also the western point of the Inner Harbor, and is long, low and narrow, with a stunted growth of firs at its southern end, but the rest bare of trees and cultivated. Opposite to it and close in with the Lane's Island shore lies **Potato Island**, about one hundred yards in diameter, bare, rocky and about twenty feet high. About one hundred yards to the northward lies **Bar Island**, a bare, rocky knubble off the northwestern end of Lane's Island, with which it is connected at low water. It is entirely bare, about twenty feet high, and has a single hut on its southeastern end.

Norton's Point.

Dodge's Point.

The Inner Harbor is of irregular shape, lies nearly **NE.** and **SW.**, is about three-eighths of a mile long and has an average, width of about four hundred yards. It is quite shallow, with a very narrow channel, and cannot be entered by strangers. The village of **Carver's Harbor** occupies both shores,—the houses being built around the quarries, whose white and desolate rocks give to the harbor and its shores a peculiarly bleak and forbidding appearance. There is no trade here besides the quarryman's,—although fishing is followed to a small extent to supply the immediate wants of the inhabitants.

Inner Harbor.

A small steam-packet plies daily between Carver's Harbor and Rockland.

DANGERS

IN APPROACHING AND ENTERING CARVER'S HARBOR.

I. ***From the Eastward, by the Main Channel.***—The approaches to this harbor from the eastward are obstructed by many sunken ledges and bare rocks, which render its navigation very unsafe. In coming from the eastward it is not well to approach Brimstone and Otter islands nearer than a mile and a half, on account of the many dangerous sunken ledges off their southern sides. Of these the most dangerous have been already described on page 235. They are, beginning with the easternmost, *Eastern Ledge*, bare at half-tide, lying seven hundred yards **S.** by **E.** ⅜ **E.** from the Brimstone Islands; *Buffalo Ledges*, also bare at half-tide, six hundred and fifty yards **SW.** by **W.** from Little Brimstone Island, with a sixteen and a half feet shoal about three hundred and fifty yards **SW.** from them; *Otter Island Ledge*, bare at three-quarters ebb, lying four hundred yards **E SE.** from the southern end of Otter Island; *Yellow Rock*, always out, and surrounded by dangerous shoals, lying three hundred and fifty yards **W.** by **N.** ¼ **N.** from the southern end of Otter Island; *Lane's Ledge*, also out at low water, lying three hundred and fifty yards **NW.** by **W.** ¼ **W.** from Yellow Rock; *Knubble Ledges*, with four feet at low water, between seven and eight hundred yards **NW.** by **W.** ¼ **W.** from Lane's Ledge, and six hundred yards **W.** by **S.** ¾ **S.** from Roberts' Islands; *Old Horse Ledge*, bare at half-tide, about seven hundred and fifty yards **W.** by **S.** ¼ **S.** from the Knubble Ledges, and about fourteen hundred yards **W.** by **S.** ¾ **S.** from Roberts' Islands; *Middle Ledge*, bare at half-tide, a quarter of a mile **NW.** by **N.** ¼ **N.** from the western end of Roberts' Islands; and **Channel Rock**, a bare islet, three-eighths of a mile **NW.** ¼ **N.** from the western end of Roberts' Islands. A good rule for avoiding these ledges before coming up with the entrance is not to go to the eastward of the range of Little Hurricane Island with the westernmost of the White Islands on a bearing of **N NW.**

When about two miles and a quarter to the southward of Heron Neck Light-house, (having it bearing about **N.** ¾ **W.**,) the course in is about **N.** by **E.**, and a red spar-buoy will soon be seen a little to the eastward of the course. This is on Colt Ledge, with six feet at

Colt Ledge.

Dangers--Carver's Harbor, Main Channel. lowest tides, lying a mile and a quarter SE. ½ S. from Heron Neck Light-house and a mile and an eighth W NW. from Roberts' Islands. It is a pinnacle rock, with deep water all around; but it is not well to pass to the eastward of it, as there are many sunken ledges between it and Channel Rock. The buoy is marked No. 4, placed in five fathoms on its southwestern end, and is always to be left to the eastward.

In standing to the eastward on a wind, before coming up with Colt Ledge buoy beware of Old Horse Ledge, previously mentioned, which, though bare at half-tide, is very dangerous at high tides, as it is not marked. It bears SW. by S. ¼ S. from Channel Rock, distant five-eighths of a mile, and from Heron Neck Light-house SE. ¾ S., distant two miles. A spindle will be recommended upon this rock. Also, in standing to the eastward towards Channel Rock,

Channel Ledges. look out for Channel Ledges, a group of detached pinnacle rocks, with from nine to twelve feet upon them, which lies midway between Channel Rock and Colt Ledge. They are not buoyed and are very dangerous. The southwesternmost and first met with has eleven feet at mean low tides, and as little as seven feet at lowest springs, bears from Old Horse Ledge NW. by N. ¾ N., distant half a mile; from Channel Rock W. ⅜ S., the same distance; and from Colt Ledge buoy SE. ⅞ E., distant seven hundred yards.

When abreast of the buoy on Colt Ledge, two spar-buoys will appear about three-eighths of a mile to the northward,—one on each bow. That to the eastward, which is red, is off the western end of Arey's Ledge; that to the westward, which is black, is on Breaker Ledge. But care must be taken to keep the western side of the channel in approaching these ledges, as the dangerous

Big Shoal. Big Shoal lies nearly midway between Colt Ledge and Arey's Ledge, is bare at low water, and is not buoyed. This ledge is very much to be dreaded, as it lies so close to the sailing-lines and no intelligible directions for avoiding it can be given. If the buoy on Arey's Ledge is in place, a good rule is not to go to the eastward of a line between it and that on Colt Ledge; but a better is not to go in at all without a pilot. A spindle will be recommended on Big Shoal.

Arey's Ledge, marked by the red spar above mentioned, is on the eastern side of the main channel, and is composed of two bare rocks, from which a long shoal mak[illegible] to the westward

Arey's Ledge. about a third of a mile, and on the southwestern end of this shoal the buoy is placed. The dry rocks bear from Heron Neck Light-house SE. by E. ¼ E., distant one mile and an eighth, and from the southern end of Lane's Island S SW., distant seven-eighths of a mile. The buoy is marked No. 2, and is placed in five fathoms on the western end of the ledge.

The black spar-buoy to the westward of the course is on Breaker Ledge, (or *The South Breaker*, as it is sometimes called,) a dangerous ledge,—the eastern end of which is dry one hour before low water, and bears SE. from Heron Neck Light-house, distant seven-eighths of a mile.

Breaker Ledge. It lies E. and W., and is between three and four hundred yards long, with eight feet on its western end; but there are dangerous sunken ledges all the way from this ledge to Heron Neck Light-house, a mile and three-quarters to the westward. The buoy is placed in five fathoms on the eastern end of the ledge, is marked No. 1, and is to be left to the westward,—the channel between it and Arey's Ledge being only about three hundred yards wide.

On approaching the entrance after passing the above ledges do not stand too far to the eastward, in order to avoid Marsh Point Ledge, a half-tide rock, surrounded by sunken ledges,

Marsh Point Ledge. lying off the mouth of Indian Creek and about a quarter of a mile from **Marsh Point**, the eastern point of that creek. It may be safely passed by not standing farther to the eastward than to bring the highest point of the southern end of Lane's Island to bear N. ¾ E. A red spar-buoy (No. 2) is placed in four fathoms on its southeastern end.

There are a number of rocks to the eastward of Marsh Point Ledge, among which may be mentioned **Round Rock** and **Bunker's Ledge**;—the former a small, round, bare rock a quarter of a mile to the eastward of Marsh Point Ledge and three hundred yards from shore, and the latter bare at low water, lying about four hundred yards to the southward of the former. Neither is buoyed. There is also *an eight feet ledge* about four hundred yards to the westward of Bunker's Ledge.

Off the southeastern end of Green Island lies Folly Ledge at a distance of four hundred yards. It is a bare rock surrounded by ledges, and should not be approached on its eastern side nearer than one hundred and fifty yards. On its western side, on the contrary, there is an excellent

Folly Ledge. channel, with from three and a half to five fathoms, leading between it and the Green Island shore. The main channel, however, passes to the eastward in from five to six fathoms. There is also *a sixteen feet spot* about three hundred and fifty yards to the eastward of the bare ledge; but vessels rarely pay any attention to it, as none but small craft pass beyond Green Ledge.

Green Ledge is the next danger met with, and lies on the eastern side of the channel. Dangerous bare and sunken ledges occupy the whole of the area between it and Lane's Island;

Green Ledge. and even its western side must receive a berth to the eastward of two hundred yards. Likewise also **Green Island Knob**, a small, bare rock on the western side of the passage, and in the entrance to The Reach,—which should not be approached from the eastward nearer than an eighth of a mile to avoid Channel Rock, with eleven feet at mean low water,

Channel Rock. lying about two hundred yards to the eastward of the Knob and four hundred yards to the southward of Norton's Point, in the middle of the eastern entrance to The

Reach. It is marked by a red spar-buoy (No. 6) placed in four fathoms on its northern end; but this buoy must be left to the westward by vessels bound into Carver's Harbor.

Passing this buoy a black spar-buoy will be seen to the northeastward, off Norton's Point. This is on Norton's Point Ledge, dry at half-tide, which makes off in an **ESE.** direction from Norton's Point to a distance of three hundred yards. The buoy is marked No. 3, and is placed in eighteen feet off the southeastern end of the ledge. Beyond this there are no buoys, the usual anchorage being just above this ledge. ***Norton's Point Ledge.***

Vessels steering up for Norton's Point Ledge buoy must be careful on the one hand to keep it open with Potato Island in order to avoid Channel Rock; and, on the other hand, not to open Potato Island too much with it in order to avoid *a detached ledge, with three and a half feet,* lying about four hundred and fifty yards to the southwestward of Potato Island, four hundred yards to the northward of Green Ledge, and on the eastern side of the channel. The rule is not to go to the eastward of Potato Island bearing **NE. ½ E.** to avoid this rock. There is no safe passage between it and Green Ledge, though a narrow and crooked channel exists with three and a half fathoms.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING CARVER'S HARBOR.

I. ***From the Eastward, by the Main Channel.***—On the **NW. ¾ W.** course into West Penobscot Bay, (see page 242,) as soon as Heron Neck Light-house bears **NW.** by **N. ¼ N.**, steer for it until within a mile and a quarter, with Green Ledge bearing **N.** by **E.** and the house on the eastern end of the easternmost Roberts' Island **E. ¾ S.** Here you will have fifteen fathoms, and **N.** by **E.** will lead safely through between Arey's and Breaker ledges with not less than five fathoms until you come abreast of Folly Ledge. When Heron Neck Light-house is brought in range with the southeastern point of Green Island on a bearing of **W. ¼ S.**, and **Norton's Island** (in the middle of The Reach) bears **NW.** by **N. ½ N.**, steer the latter course, carrying not less than five fathoms, until past Green Ledge, with the middle of the entrance to the Inner Harbor bearing **NE. ¾ E.** and the eastern extremity of Norton's Point **NE.** by **N.**, distant three-eighths of a mile, when steer the former course, which will lead safely into the Inner Harbor with not less than eighteen feet. Anchor at discretion, after passing Potato Island, in from six to sixteen feet at low water.

The above courses pass seven-eighths of a mile to the westward of Yellow Rock; three-quarters of a mile to the westward of Lane's Ledge; a quarter of a mile to the westward of Old Horse Ledge; three hundred and fifty yards to the westward of Colt Ledge; a quarter of a mile to the westward of Big Shoal; one hundred and fifty yards to the eastward of Breaker Ledge; the same distance to the westward of the red buoy off the western end of Arey's Ledge; an eighth of a mile to the eastward of Folly Ledge; the same distance to the westward of Green Ledge; the same distance to the eastward of Green Island Knob; one hundred yards to the eastward of Channel Rock buoy; one hundred and fifty yards to the northward of the three feet rock to the northward of Green Ledge; and fifty yards to the southward of the black spar-buoy on Norton's Point Ledge.

DANGERS

IN APPROACHING AND ENTERING CARVER'S HARBOR.

II. ***From the Eastward, by the Thoroughfare to the Southward of Vinal Haven Island.***—With Saddle-back Ledge Light-house bearing **SE.** by **E. ¼ E.**, the course into the Thoroughfare is **NW.** by **W. ¼ W.** On this course the first danger met with is **Diamond Rock**, on the southern side of the passage, a low, rocky islet destitute of all vegetation. The sailing-line passes between this rock and Diamond Rock Ledge nearly half a mile to the northward, which has two feet at mean low water, and is marked by a black spar-buoy (No. 1) placed in five fathoms fifty yards to the northwestward of the ledge. This buoy should be placed to the southward of the ledge, and such change will be recommended. ***Diamond Rock Ledge.***

There are also *two rocks, one bare and one having eleven feet on it,* lying off the northern end of Brimstone Island at distances respectively of an eighth and a quarter of a mile. They are not marked, but are easily avoided by not standing to the southward of Diamond Rock in range with Saddle-back Ledge Light-house.

When past Diamond Rock Ledge look out, on the northern side of the passage, for Sheep Island Ledge, a detached shoal lying **NE.** and **SW.**, four hundred yards long, bare at its northern end and having four feet on its southern end. It lies nearly half a mile due **S.** from Sheep Island, with a depth of from seven to ten fathoms between them; but it is not well to pass to the northward of the ledge without a pilot. From the northern ***Sheep Island Ledge.***

Dangers--Carver's Harbor, Thoroughfare Channel. end of Carver's Island, it is distant a little over a quarter of a mile,—the channel passing between them. A red spar-buoy (No. 4) is placed in four fathoms on its southeastern side, as a guide to this passage from the eastward.

On the southern side of the passage, about midway between Carver's and Hay islands, lies **Middle Ledge**, a bare rock about two hundred yards long **NE.** and **SW.**, and bold-to on all sides. To avoid it do not stand to the southward of a line between the northern ends of Carver's and Brimstone islands.

A quarter of a mile to the northwestward of Sheep Island Ledge, and six hundred yards to the southward of Sheep Island, lies *a detached ledge with twelve feet* which is not buoyed.

Old Duke's Ledges. To avoid it vessels must not stand to the northward of Saddle-back Ledge Light-house bearing **SE.** by **E.** $\frac{1}{8}$ **E.** This bearing also avoids the Old Duke's Ledges, a group of bare and sunken rocks, with narrow channels among them, extending in a westerly direction from the southern end of Sheep Island for three-eighths of a mile. The westernmost and largest of the group is bare except at high water, while, of the others, some are bare at half-tide and some have from three to nine feet water on them. They are not marked in any way, but a spindle will be recommended to be placed on the westernmost.

When abreast of the northern end of Carver's Island the course turns more to the westward, passing a quarter of a mile to the southward of Wreck Ledge,—a small, rocky islet

Wreck Ledge. close in with the Vinal Haven shore and about three-eighths of a mile to the westward of the Old Duke's Ledges. Its southern extremity is nearly a quarter of a mile from shore, and may be approached within one hundred yards with not less than three fathoms. To avoid it do not stand to the northward of Heron Neck Light-house bearing **W.** $\frac{3}{4}$ **N.**

Bunker's Ledge, the next danger met with, lies on the northern side of the passage,—the course passing about three hundred yards to the southward of it. It lies **NW.** and **SE.**, is

Bunker's Ledge. one hundred and fifty yards long, for the most part bare at low water, and is not marked in any way. To avoid it do not stand to the northward of Heron Neck Light-house bearing **W.** by **N.** $\frac{1}{4}$ **N.**

Continuing to the westward, the course also passes about two hundred yards to the southward of *an eight feet ledge* lying about four hundred yards to the westward of Bunker's Ledge and three-eighths of a mile from the Vinal Haven shore. It is not buoyed, but should be, and

Marsh Point Ledge. such action will be recommended. Meanwhile, to avoid it, go about as soon as Heron Neck Light-house bears **W.** by **N.** $\frac{3}{8}$ **N.** Next to the westward of this lies Marsh Point Ledge, a half-tide rock, surrounded by sunken ledges, lying off the mouth of Indian Creek and about a quarter of a mile from Marsh Point. It is marked by a red spar-buoy (No. 2) placed in four fathoms on its southeastern side, and the sailing-lines pass about five hundred yards to the southward and the same distance to the westward of it. To the westward of this ledge this channel and the Main Channel unite, and the dangers are described on pages 260–261.

SAILING DIRECTIONS

IN APPROACHING AND ENTERING CARVER'S HARBOR.

II. ***From the Eastward, by the Thoroughfare to the Southward of Vinal Haven Island.***—Bring Saddle-back Ledge Light-house to bear **SE.** by **E.** $\frac{1}{4}$ **E.** and steer **NW.** by **W.** $\frac{1}{4}$ **W.** until abreast of the northeastern end of Carver's Island, which will bear **S.** $\frac{3}{4}$ **W.**, distant two hundred yards. Heron Neck Light-house will now bear **W.** by **N.** $\frac{1}{4}$ **N.**, and **W.** $\frac{1}{8}$ **N.** will lead, with not less than six fathoms, to the southward of Bunker's Ledge and between Marsh Point Ledge and Arey's Ledge. On this course, when Heron Neck Light-house bears **W.** by **N.** $\frac{5}{8}$ **N.** and Green Ledge **NW.** by **N.** $\frac{3}{4}$ **N.**, steer **NW.** $\frac{1}{2}$ **N.**, carrying not less than six fathoms, until nearly abreast of Folly Ledge and Heron Neck Light-house is brought to bear **W.** $\frac{1}{4}$ **S.** and is in range with the southeastern end of Green Island. Now steer **NW.** by **N.** $\frac{1}{2}$ **N.** towards Norton's Island, and follow the directions for the harbor.

The above courses pass three hundred yards to the northward of Diamond Rock; the same distance to the southward of Diamond Rock Ledge; about a quarter of a mile to the southward of Sheep Island Ledge; four hundred yards to the northward of Middle Ledge; nearly three-eighths of a mile to the southward of the Old Duke's Ledges; a quarter of a mile to the southward of Wreck Ledge; an eighth of a mile to the southward of Bunker's Ledge; and about five hundred yards to the southward, and the same distance to the westward, of Marsh Point Ledge.

DANGERS

IN APPROACHING AND ENTERING CARVER'S HARBOR.

III. ***From West Penobscot Bay by the Western Channel.***—In approaching the harbor by this channel the first danger met with lies off the southern end of Hurricane Island, and is formed by a

long line of bare and sunken ledges, known as Deadman's Ledges. These ledges, beginning at their northern end, abreast of the middle of Hurricane Island, on its eastern side, extend about S. by E. for about a mile,—their southern end being distant from the southeastern point of Hurricane Island nearly three-quarters of a mile. This southern end, which is bare at half-tide, is known locally as *James and Willie's Ledge*, and is marked by a black spar-buoy (No. 1) placed off its southern end as a guide to this passage. To the westward of the buoy the whole area south of Hurricane Island is shoal,—being occupied by a great number of bare and sunken ledges. Great care is therefore necessary to avoid these rocks. ***Deadman's Ledges.***

After passing the buoy on James and Willie's Ledge, and approaching Heron Neck Light-house, look out, on the southern side of the passage, for Heron Neck Ledge, a bare ledge, with two or three rocky knubbles on it, out at high water. It is not buoyed, and vessels using this passage pass to the northward of it. When past it the course continues to the eastward, keeping the Green Island shore best aboard to avoid *a pinnacle rock, with twelve feet at low water*, which lies a quarter of a mile E. from Heron Neck Ledge and about five hundred yards to the southeastward of Heron Neck. It has no name, is not buoyed, and is quite bold-to. ***Heron Neck Ledge.***

Vessels which pass to the southward of Heron Neck Ledge must beware of The Breakers, a line of dangerous detached ledges extending E. and W. and about three-eighths of a mile long, with deep channels among them. The two westernmost are dry at mean low water and the easternmost has nine feet. The former, which obstructs this passage, bears from Heron Neck Light-house S. ¼ E., distant a little over half a mile, and from the bare part of Heron Neck Ledge S. by E. ¾ E., distant six hundred yards. There are no prominent marks for avoiding it, and no directions can be given other than to keep not less than three hundred yards from the dry part of Heron Neck Ledge. ***The Breakers.***

When past The Breakers there are no dangers in the channel until up with Folly Ledge; but if standing to the southward on a wind you must beware of Breaker Ledge, or *The South Breaker*, as it is sometimes called, a dangerous ledge,—the eastern end of which is dry one hour before low water, and bears SE. from Heron Neck Light-house, distant seven-eighths of a mile. It lies E. and W., and is between three and four hundred yards long, with eight feet on its western end; but there are dangerous sunken ledges all the way from this ledge to Heron Neck Light-house, a mile and three-quarters to the westward. It is marked by a black spar-buoy placed in five fathoms on its eastern end. The buoy is marked No. 1, and is to be left to the westward. ***Breaker Ledge.***

Also, in standing to the southward, look out for Arey's Ledge, already described on page 260, and marked by a red spar-buoy (No. 2). This ledge is composed of two bare rocks, from which a long shoal makes to the westward about a third of a mile, and on the southwestern end of this shoal the buoy is placed. The dry rocks bear from Heron Neck Light-house SE. by E. ¼ E., distant one mile and an eighth, and from the southern end of Lane's Island S SW., distant seven-eighths of a mile. The buoy is placed in five fathoms on the western end of the ledge. When past Arey's Ledge all the channels unite, and the dangers will be found described on pages 260–261. ***Arey's Ledge.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING CARVER'S HARBOR.

III. ***From West Penobscot Bay, by the Western Channel.***—On the course up the bay bring Heron Neck Light-house to bear NE. ½ E., and steer for it until the highest part of Hurricane Island bears N. ⅛ E., when you will have sixteen fathoms, and NE. by E. ¾ E. will lead safely through between Heron Neck Ledge and The Breakers with not less than five fathoms. On this course, when the southeastern extremity of Green Island bears NW. ⅜ N., distant three hundred and fifty yards, and the dry part of Folly Ledge is in range with the house on the eastern part of Norton's Point on a bearing of N. by E. ⅝ E., steer E. for a quarter of a mile, heading about for the southernmost point of Vinal Haven Island. This course clears the shoals to the southeastward of Folly Ledge with not less than six fathoms. As soon as Green Ledge bears N. ½ E., steer for it until within three hundred and fifty yards, passing to the eastward of Folly Ledge and its outlying shoals and keeping Green Ledge in range with Norton's Point. You are now in the main entrance, with Green Island Knob in range with Norton's Island on a bearing of NW. by N. ½ N., and must steer that course and follow the directions for the harbor.

The above courses pass three hundred yards to the southward of the dry part of Heron Neck Ledge; one hundred and fifty yards to the northward of the westernmost of The Breakers; a little over one hundred yards to the southward of the twelve feet rock to the southeastward of Heron Neck; one hundred and fifty yards to the southward, and seventy-five yards to the eastward, of the outlying shoals off Folly Ledge; and two hundred yards to the westward of Green Ledge.

Sailing Directions--Carver's Harbor, Western Channel. *Or*, you may bring Heron Neck Light-house to bear **NE. ½ E.**, as before, and steer for it, passing to the northward of Heron Neck Ledge, and continuing the course until within three hundred yards of the light-house, when the southernmost point of Vinal Haven will bear **E.**, and that course will lead safely through with not less than seven fathoms. On this course, when Green Ledge bears **N. ½ E.**, in range with the eastern end of Norton's Point, steer for it until within three hundred and fifty yards, passing to the eastward of Folly Ledge and its outlying shoals. You are now in the main entrance, with Green Island Knob in range with Norton's Island on a bearing of **NW. by N. ½ N.**, as before, and must steer that course, following the directions for the harbor. The above courses pass six hundred yards to the southward of James and Willie's Ledge; one hundred and fifty yards to the westward, and an eighth of a mile to the northward, of Heron Neck Ledge; and an eighth of a mile to the northward of the twelve feet rock to the southeastward of Heron Neck.

Or, you may bring Heron Neck Light-house to bear **NE. by E. ½ E.** and steer for it until the southernmost point of Vinal Haven Island bears **E.**, when steer that course and follow the directions given above. This course passes eight hundred yards to the southward of the western part of Deadman's Ledges; four hundred yards to the southward of James and Willie's Ledge; and an eighth of a mile to the westward, and two hundred yards to the northward, of Heron Neck Ledge.

Or, you may bring Heron Neck Light-house to bear **E. by N. ⅞ N.** and steer for it until the southernmost point of Vinal Haven bears **E.**, when steer that course and follow the above directions. This course passes six hundred yards to the southward of the western part of Deadman's Ledges; three hundred yards to the southward of James and Willie's Ledge; and the same distance to the westward of Heron Neck Ledge.

LIGHT-HOUSE.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Heron Neck Light-house	**44 1 30**	**68 51 43**	**4 35 26.9**	Fixed red.	**92**	**14**

TIDES.

Corrected Establishment	**11h 2m**
Mean Rise and Fall of tides	**9.6 ft.**
Mean Rise and Fall of Spring tides	**10.1 ft.**
Mean Rise and Fall of Neap tides	**9.0 ft.**
Mean duration of Rise	**6h 17m**
Mean duration of Fall	**6h 8m**

HURRICANE SOUND

is that body of water included between Green Island and Vinal Haven Island on the east, and Hurricane Island, the White Islands and Leadbetter's Island on the west. It runs in a N. and S. direction and has deep water in it, but is obstructed by many ledges and sunken rocks, and is not recommended for strangers. There are two entrances to this Sound—the South Channel, which leads between Green Island on the east and Hurricane Island on the west; and the Western Channel, which leads between the White Islands on the north and Hurricane Island on the south. Both are good, but the South Channel is the best,—being the easier of access for strangers.

Many other passages lead into Hurricane Sound from the bay, in all of which there is water sufficient for the largest vessels; but their navigation is impossible for strangers on account, in some cases, of their contracted limits, winding courses, and strong currents; and in others, of the numerous ledges obstructing them, which are not buoyed.

Green Island, before described, lies on the eastern side of the southern entrance; and Heron Neck Light-house, on its southwestern end, is the guide to this Sound as well as to Carver's Harbor. (See page 220.) **Hurricane Island,** on the western side, is a little over half a mile long **N.** and **S.**, rocky, and dotted here and there with a thin growth of fir and spruce. Its surface is undulating, but highest in the middle, where it rises to a sort of peak one hundred and sixty feet high, somewhat steeper on the eastern than on the western side. Off the southern end extends to the southward a mass of ledges and bare rocks to the distance of three-quarters of a mile, and called **Deadman's Ledges.** They have been already described on page 262; and the southernmost, which is known as **James and Willie's Ledge,** is marked by a black spar-buoy. The South Channel passes between these ledges and Green Island with an average width of about seven hundred yards and a depth of from twelve to twenty-four fathoms. There is also a deep channel between them and Hurricane Island, in which not less than four and a half fathoms at low water is found, but it is entirely unsafe without a local pilot.

Little Hurricane Island lies about three-eighths of a mile to the westward of Hurricane Island and is about three hundred yards long, bare of trees, (except one or two at the northern end,) and surrounded by very dangerous ledges. It is on the southern side of the western entrance. On the northern side of that entrance lie the White Islands, a group of seven rocky islets, lying **E NE.** and **W SW.** from each other, of moderate height, and dotted with a very few scrubby fir trees. One or two of them have houses, but for the most part they are barren and rocky. These islands are in two clusters, separated by a wide and nearly unobstructed passage with from eight to seventeen fathoms in it. The southernmost group is composed of four, lying in a line nearly **N.** and **S.**, with no safe passage between them. Of this group the most southerly islet, which is five-eighths of a mile **N.** by **W.** ½ **W.** from Little Hurricane Island, is also the westernmost of the islets off Vinal Haven, and marks the eastern limits of the bay channel at this point. It is four hundred yards long **N.** and **S.**, sixty feet high, somewhat steep, bare on the summit, but fringed near the shore with scrubby spruce and fir. A bare rock, three hundred and fifty yards to the westward of its northern end, is connected with it at low water. One hundred and fifty yards to the eastward of this island is another and much smaller one, twenty feet high, nearly bare, but having a few trees on its western side. An eighth of a mile to the northward of this is the third of the group,—low, flat, and bare except for a very few spruce scattered along its northern and western faces. This is joined at low water, by a line of ledges, to the northernmost and largest of the lower group, which is nearly a quarter of a mile long **N.** and **S.**, fifty feet high, and thinly wooded with a scrubby growth of fir and spruce. There are a few houses on its southern end. A quarter of a mile to the eastward of this island lies the westernmost of the second group, with a good channel, having thirteen fathoms, between them. It is in reality two islets joined by a shingly bar, and is low, flat and thinly wooded. Two hundred yards to the northward of this is another islet, from twenty to fifty feet high, five hundred yards long and lowest in the middle, where also it is wooded,—the northern half being bare of trees. Dangerous ledges lie on its western and southern sides; but its eastern side is bold-to,—five fathoms being found between it and the islet to the eastward of it. Of this northeastern group the southernmost is in reality two islets, connected at low water and also joined to the large island off their northern end. The northern islet is thirty feet high and thinly wooded; the other is but ten feet high; and both have dangerous ledges lying off their southern end. The southernmost islet is five-eighths of a mile to the northward of Hurricane Island and nearly half a mile to the eastward of the southwestern group,—the western entrance to Hurricane Sound passing between them with not less than eight fathoms. The large island to the northward of these, which is the largest of the group, lies nearly **N.** by **E.** and **S.** by **W.**, is about half a mile long, varying in height from forty to sixty feet, (the latter at its southern end,) and is for the most part wooded. One hundred and fifty yards to the westward of its northern end, and separated from it by a passage full of ledges, lies the northernmost of the group,—very irregular in shape, about an eighth of a mile in diameter **E.** and **W.**, low on its eastern side, but rising to forty feef at its western end, where it is thinly wooded. All of these islands are dangerous of approach, and strangers must not come near them.

Little Hurricane Island.

White Islands.

On the northern side of Green Island makes in what is known as Old Harbor, which is at the north end of The Reach, and has from two to six fathoms, but is obstructed by dangerous ledges. It may be entered, however, by keeping the bare ledge on the southern side of the entrance about one hundred yards off to avoid *a dangerous six feet rock* lying about one hundred and seventy-five yards to the southeastward of Dog Point. There is here a small settlement.

Old Harbor.

Dog Point is low, gently sloping, with cleared summit upon which are a couple of houses, and behind these a steep, wooded hill. About half a mile to the northward is **Dyer's Island,** which lies close in with the Vinal Haven shore. It is low and flat except at its northwestern end, where there is a somewhat steep hillock; and cleared, except for a few trees near the centre of the island.

Dog Point.

Above Dyer's Island is **Gundell's Island,** a low, flat islet, with a few trees and one or two houses. It lies close in with Barton's Island, which shows an undulating surface, highest near its northern end, thickly wooded with spruce and fir, but having occasional cleared fields, and a few houses near the shore. Between it and Dyer's Island there is no safe passage; but on its northern side three feet at low water may be taken, through a very narrow channel between it and Conway's Point, into a large cove of irregular shape, about a mile and a quarter long **N.** and **S.**, and in the middle of which from eight to eighteen fathoms may be found at low water. It is entirely land-locked,—the northern passage being only about one hundred and fifty yards wide, with three feet in it; and the southern passage about sixty yards wide and dry at low water. This is called The Basin, and forms a most secure and excellent harbor, but cannot be entered except at high water, and then only with a light-draught vessel. No stranger can enter it at any time. Between Barton's Island and Leadbetter's Island two-thirds of the passage is filled with rocky islets, bare ledges and sunken rocks, so that it is not possible to approach the western shore nearer than three-eighths of a mile,—the channel running close along the eastern shore of Leadbetter's Island with from thirteen to fifteen fathoms water.

Barton's Island.

The Basin.

Conway's Point, which is over one hundred feet high, steep, and bare of trees, (except on its southeastern slopes, where there are a few,) is the southern extremity of one of those long peninsulas so common on Vinal Haven and North Haven islands. There are one or two houses on its western side; and hence to the mouth of Long Cove, half a mile above, the shore shows cleared lands backed by woods and dotted with houses at long intervals. Long Cove, which makes to the northeastward for over a mile, has good anchorage in from two to four fathoms; but is so obstructed by islets and ledges that no intelligible directions can be given for it. Vessels usually keep the eastern shore aboard until past the wooded island in the middle of its mouth.

Conway's Point.

On the western side of the passage, and about three hundred and fifty yards to the southwestward of Leadbetter's Island, are two small, rocky islands, connected at low water. The southernmost, called Lairey's Island, is about four hundred yards long, and has one or two fir trees upon it. The northernmost, called Pole Island, is six hundred yards long, much higher than the other, has a very few scattered spruce upon it, and one house on its eastern end. There is a passage, with six fathoms at low water, leading to the westward, between this and Leadbetter's Island; and another, much narrower, with three and a half fathoms, leading between these islands and the White Islands; but neither is fit for strangers.

Lairey's and Pole Islands.

The passage from Hurricane Sound to the northward leads into **Leadbetter's Narrows**, along the northern shore of Leadbetter's Island, and thence between Dogfish Island and Crockett's Point into Penobscot Bay. Leadbetter's Island is exactly one mile long N. and S., widest at its northern end, where it is nearly half a mile wide, and terminating at its southern end in a narrow, thinly wooded point about forty feet high, with a single house on its highest part. The surface is somewhat undulating,—rising from the southern end to a height of sixty feet near the centre, and running into a steep, thinly wooded hill one hundred feet high at the northwestern end of the island. The Narrows pass between the northern shore (which is gently sloping, cleared, and has several houses on it) and a thinly wooded point about forty feet high on the Vinal Haven shore,—the passage being but little over one hundred yards wide, but having not less than four fathoms, in a very narrow and dangerous channel. The northern portion of this point (which is abreast of Dogfish Island) is undulating, varying in height from ten to forty feet, and entirely cleared and cultivated. On its northern side makes in **Crockett's Cove** in a northeasterly direction for one mile; and affords excellent anchorage in from two to four fathoms, well sheltered.

Leadbetter's Island.

Dogfish Island and Crockett's Point have been already described on page 210;—the former as a rocky island a quarter of a mile long N NE. and S SW., sixty feet high at its highest point, and covered with grass except on its western side, where there are a few stunted spruce trees near the foot of the slope. **Crockett's Point** is rocky, forty feet high, and covered only with a scanty growth of grass, and forms the northern point of entrance to Crockett's Cove, mentioned above. When past it you are in the entrance to Fox Islands Thoroughfare, and may go through that passage to the eastward, or round Dogfish Ledges to the northward, and enter West Penobscot Bay.

Dogfish Island.

DANGERS

IN APPROACHING, ENTERING AND PASSING THROUGH HURRICANE SOUND.

I. ***By the South Channel.***—On the **NW. ¾ W.** course into West Penobscot Bay, when Heron Neck Light-house bears **N. ⅜ W.** and the highest part of Hurricane Island **N NW.**, the course for Hurricane Sound is **N.** by **W. ¼ W.** On this course the first danger met with is called The Breakers, and is formed by a line of detached ledges extending **E.** and **W.**, about three-eighths of a mile long, with deep channels among them. The two westernmost, which obstruct this passage, are dry at mean low water, while the easternmost has nine feet; but the latter is not in the way of vessels using this channel. The westernmost rock bears from Heron Neck Light-house **S. ¼ E.**, distant a little over half a mile. To avoid it, when in its vicinity do not go to the eastward of Heron Neck Light-house bearing **N. ¼ E.**

The Breakers.

Heron Neck Ledge, the next danger met with, and lying on the eastern side of this passage, is a large mass of shoal ground with two or three knubbles out at high water, and is a quarter of a mile **S.** by **E. ¼ E.** from Heron Neck. The course passes well to the westward of it, and leads into the middle of the entrance to the Sound, with Deadman's Ledges on the western side. These ledges, beginning at their northern end abreast of the middle of Hurricane Island, on its eastern side, extend about **S.** by **E.** for nearly a mile;—their southern end being distant from the southeastern point of Hurricane Island, nearly three-quarters of a mile. This southern end, which is bare at half-tide, is known locally as *James and Willie's Ledge*, and is marked by a black spar-buoy (No. 1) placed off its southern end. To the westward of the buoy the whole area to the southward of Hurricane Island is shoal,—being occupied by a great number of bare and sunken ledges. Great care is therefore necessary to avoid these rocks. The easternmost of the ledges is a rocky islet about one hundred yards in diameter; and the course passes three hundred and fifty yards to the eastward of it.

Deadman's Ledges.

When past Deadman's Ledges, the next danger met with lies off the northern end of Hurricane Island, and is marked by a black spar-buoy. It is called *Hurricane Island North Ledge*, and makes off in a northwesterly direction for three-eighths of a mile, with five feet at low water a quarter of a mile from the island. The buoy, which is marked No. 3, is placed in four fathoms on the northern side of the ledge. When up with this buoy look out for Lairey's Ledge, lying exactly in the middle of the Sound, but which must be left to the westward. This is a large shoal, covering an area of two hundred yards square, and is formed by bare rocks surrounded by ledges out at low water. No intelligible directions can be given for avoiding it, other than to keep either the Vinal Haven or White Islands shore aboard, as the ledge lies exactly in the middle. About two hundred yards to the southwestward of the bare part of the ledge lies *a detached pinnacle rock with six feet at low water.*

Lairey's Ledge.

When past Lairey's Ledge, the course leads towards the southern end of Leadbetter's Island; and there will be seen a little to the northward of Lairey's Island a spar-buoy painted red and black in horizontal stripes. This is on Lairey's Island North Ledge, with nine feet at low water, and is mainly obstructive of the passage into West Penobscot Bay called Lairey's Narrows. The sailing-line passes about two hundred yards to the eastward of it, about midway between it and the rocky islets on the western side of the Sound. *Lairey's Island North Ledge.*

These islets occupy nearly one-half of the width of the Sound from abreast of Lairey's Island as far up as the entrance to Leadbetter's Narrows; and, as a rule, are quite bold-to on their western side, although strangers must not attempt to pass to the eastward of them.

In Leadbetter's Narrows there is only one danger,—*a two feet ledge* making to the northward from the northern end of the island for one hundred yards. As the whole width of the passage is only about two hundred yards, this ledge becomes a serious obstruction and should have a spindle upon it. This will be recommended.

When past Leadbetter's Narrows you are in West Penobscot Bay.

SAILING DIRECTIONS

FOR APPROACHING, ENTERING AND PASSING THROUGH HURRICANE SOUND.

I. ***By the South Channel.***—On the **NW. ⅜ W.** course into West Penobscot Bay, (see page 242,) as soon as Heron Neck Light-house bears **N. ⅜ W.** and the highest part of Hurricane Island **N NW.**, steer **N.** by **W. ¼ W.**, which course will lead with not less than six fathoms to abreast of the upper end of Deadman's Ledges. Now, when the northern end of Hurricane Island bears **NW.** by **W. ⅛ W.** and Dog Point is seen just clear of the northwestern end of Green Island on a bearing of **NE.** by **N.**, steer **N.**, carrying not less than ten fathoms, until abreast of Lairey's Ledge, with the southern end of Leadbetter's Island bearing **N.** by **W. ¼ W.** and the southernmost of the White Islands **W. ¼ S.** Now steer **N.** by **W. ¼ W.** towards Leadbetter's Island, and continue it until within six hundred yards, with the highest part of Lairey's Island bearing **W. ¾ S.**, when steer **N. ⅛ E.** along the eastern shore of Leadbetter's Island until Leadbetter's Narrows are well open, and the highest part of the northern end of Dogfish Island bears **NW. ⅜ W.** Now steer that course, which clears the two feet rock in the Narrows and leads, with not less than eighteen feet, to within four hundred yards of Dogfish Island. When Crockett's Point bears **N. ½ W.** steer **N NW.**, which will lead you safely into the bay at the entrance to Fox Islands Thoroughfare.

The above courses pass two hundred yards to the westward of The Breakers; the same distance to the westward of Heron Neck Ledge; six hundred yards to the eastward of James and Willie's Ledge; four hundred yards to the eastward of the rocky islet forming the easternmost of Deadman's Ledges; a little over a quarter of a mile to the eastward of the northern end of Deadman's Ledges; half a mile to the eastward of Hurricane Island North Ledge; three hundred yards to the eastward of the bare part of Lairey's Ledge; a little over two hundred yards to the eastward of Lairey's Island North Ledge; and about midway between Leadbetter's Island and the dangerous rocks and islets on the eastern side of the passage.

On the above courses, to enter West Penobscot Bay through Lairey's Narrows.—Continue the **N.** by **W. ¼ W.** course towards the southern end of Leadbetter's Island until within two hundred yards of the latter, when the striped buoy on Lairey's Island North Ledge will be abeam and about one hundred and fifty yards off. The Narrows are now fairly open, and **W NW.** will lead safely through them, passing about one hundred and fifty yards to the northward of the black spar-buoy (No. 1) on *White Island Ledge*, (a small detached ledge to the northward of the White Islands and bare at low water.) Continue this course until exactly midway between Green Island and Green Ledge,—the former bearing **NE.** by **N. ⅜ N.**,—and Stand-in Point bears **N. ¾ W.**, when **NW.** by **N. ¼ N.** will lead safely out into the bay, passing about two hundred yards to the southwestward of the red spar-buoy (No. 6) on Green Island Ledge and carrying not less than six fathoms. (*Green Island Ledge* is a detached shoal, bare at mean low water, and lying about four hundred yards to the northwestward of Green Island and about five-eighths of a mile to the southwestward of Dogfish Island. There is no safe passage between it and Green Island.)

DANGERS

IN APPROACHING, ENTERING AND PASSING THROUGH HURRICANE SOUND.

II. ***From West Penobscot Bay by the Western Channel.***—In approaching this Sound from the westward the first danger met with is the Ten Feet Spot, a detached pinnacle rock with ten feet at low water, lying **SW. ½ W.** from the southernmost of the White Islands, distant one mile, and from Little Hurricane Island **W.**, the same distance. It is not buoyed, but should be, and this will be recommended. The sailing-line passes about four hundred yards to the northward of it; and when past it there are no dangers until you are nearly in line between the southernmost of the White Islands and Little Hurricane Island, when you should beware of *Little Hurricane Island Ledge*, a detached rock with thirteen feet at low tide, lying nearly three-eighths of a mile **NW. ⅜ N.** from Little Hurricane Island and about seven hundred yards **S. ¼ E.** from the southernmost of the White Islands. It is not buoyed, but a buoy will be recommended to be placed upon it.

Ten Feet Spot.

When abreast of Little Hurricane Island Ledge, and off the southernmost of the White Islands, there will be seen ahead, and three-eighths of a mile off, a black spar-buoy. This is on Middle Rock, a detached ledge of small extent, bare at one-quarter ebb, and having a four-fathom channel between it and Hurricane Island. The buoy is marked No. 5, placed in five fathoms off the northwestern side of the rock, and bears from the northern end of Hurricane Island **NW.** by **W. ⅝ W.**, distant nearly half a mile, and from Little Hurricane Island **N.** by **E. ½ E.**, distant three-eighths of a mile. The sailing-line passes about one hundred yards to the northward of it.

Middle Rock.

When past the buoy on Middle Rock, another black spar-buoy will be seen ahead and about three-eighths of a mile off. This is on Hurricane Island North Ledge, also on the southern side of the channel, and making off in a northwesterly direction from the northern end of the island for three-eighths of a mile. There is five feet at low water a quarter of a mile from the island, and care must be taken to give the buoy (which is marked No. 3) a good berth to the southward, and also not to stand farther to the southward than a line between it and the black buoy on Middle Rock, by which means the shoals to the northward of Hurricane Island will be avoided. When past this buoy you are fairly in the Sound, and the dangers will be found described on page 266.

Hurricane Island North Ledge.

SAILING DIRECTIONS

FOR APPROACHING, ENTERING AND PASSING THROUGH HURRICANE SOUND.

II. ***From West Penobscot Bay by the Western Channel.***—On the **N. ¾ E.** course up the bay, when Heron Neck Light-house bears **E. ⅝ S.** and the highest part of the southernmost of the White Islands **E.** by **N. ¾ N.**, steer **E.** by **N. ¼ N.**, which will lead safely into the Sound clear of all dangers, carrying not less than four fathoms water. Continue the course until abreast of the black spar-buoy (No. 3) off the northern end of Hurricane Island North Ledge, distant from it about two hundred yards, and the highest part of Hurricane Island bears **S. ¾ W.**, when you will have about eight fathoms water and must steer **NNE.**, passing to the westward of Lairey's Ledge and carrying not less than ten fathoms. On this course, when the southern end of Leadbetter's Island bears **N.** by **W. ¼ W.**, distant half a mile, and the middle of Lairey's Island **NW.**, steer **N.** by **W. ¼ W.**, and follow the directions previously given, according as you are bound through Lairey's Narrows or Leadbetter's Narrows. *Or*, when abreast of the black buoy off Hurricane Island North Ledge, with the highest part of Hurricane Island bearing **S. ¾ W.**, as before, steer **E. Southerly**, which will lead safely, with not less than three fathoms, into Old Harbor. Great care is necessary, however, to avoid being set on to the dangerous ledges making off from the northern end of Green Island for nearly a quarter of a mile.

The above courses for entering and passing through Hurricane Sound pass four hundred yards to the northward of the Ten Feet Spot; two hundred and fifty yards to the northward of Little Hurricane Island Ledge; a little over one hundred yards to the northward of the black buoy on Middle Rock; about two hundred yards to the northward of the black buoy on Hurricane Island North Ledge; and nearly four hundred and fifty yards to the westward of Lairey's Ledge.

The Reach, or ***Fox Island Reach,*** as it is sometimes called, is the narrow, crooked and dangerous passage which leads (from abreast of the entrance to Carver's Harbor) between the eastern shore of Green Island and Vinal Haven into Hurricane Sound. It is about a mile and a half long, and in no place has a greater width than a quarter of a mile; but even this width is much diminished by the many sunken ledges and bare rocks which line both sides of the passage,—leaving an available channel

in some places only about fifty yards wide and nowhere over two hundred yards in width between the two banks. Eighteen feet may be carried through it at mean low water; but no stranger should ever attempt it, and no detailed description of its dangers or directions for passing through can be given. Only the fishermen living in the vicinity, and those who are local pilots, can possibly thread the intricate and dangerous channel of The Reach, and vessels which intend to pass through must avail themselves of the services of a competent pilot, which can always be obtained in the neighborhood. *Sailing Directions--The Reach.*

It may be remarked that several buoys have been placed in The Reach as guides to vessels passing through. The southernmost of these (which is painted red and marked No. 6) is placed nearly in the middle of the eastern entrance to the passage, and is on *Channel Rock*, before described in the approaches to Carver's Harbor. (See also page 260.) About three-quarters of a mile above the buoy on Channel Rock is another red spar-buoy, which is marked No. 2, and placed on the western side of *a dangerous six feet ledge* making off from the Vinal Haven shore. The course passes to the westward of it; and a little over half a mile to the northward, nearly in the middle of the western entrance to the passage, and off Dog Point, will be seen a spar-buoy, painted red and marked No. 4. This is the last buoy met with in passing through The Reach, and is placed on the southwestern side of *Dog Point Ledge*, which has six feet at low water. The course out leaves it to the eastward; and when past it you are in Hurricane Sound. As before remarked, no stranger can pass through this passage without the assistance of a pilot.

HOME HARBOR.

This harbor, already described, (see page 225,) lies on the western side of West Penobscot Bay, between Hewell's and Pleasant islands, and has from two to eight fathoms water. The approach to it is much obstructed, and it is therefore unsafe for strangers, who should not attempt it except in cases of extreme necessity. For such cases the following directions are given.

DANGERS.

The approach to this harbor from the bay is between Halibut Rock on the north and Two-Bush Reef on the south. The former, which is bare at low water, lies half a mile **S.** by **E.** of the southern end of Andrews' Island, with deep water all around it. It is not buoyed. After passing it there will be seen a small rocky island, having no name, bearing **SE.** by **S.** ¼ **S.** from the eastern end of Pleasant Island, about a quarter of a mile distant. When past it, the northern side of the channel is marked by two rocky islets, bearing **SE.** ½ **S.** from the southeastern point of Hewell's Island, and known as **Hewell's Island Rocks.** They are two detached rocks, in the middle of the passage, with six fathoms water between them and from three to eight fathoms on all sides of them. The northwestern rock has a channel nearly two hundred yards wide, and with six fathoms water between it and Hewell's Island, and another with seven fathoms between it and Pleasant Island Ledge. This latter is the channel generally used, and is a hundred and thirty yards wide in its narrowest part. Between the two rocks three fathoms may be taken at mean low water. *Halibut Rock.*

Vessels entering Home Harbor to the northward of Hewell's Island Rocks pass to the southward of a couple of rocky islets connected at low water, and called by the common name of Yellow Ledge. This ledge bears **E.** ½ **S.** from the southeastern end of Hewell's Island, distant a quarter of a mile, and **NE.** by **N.** from the easternmost of the Hewell's Island Rocks, distant three hundred and twenty-five yards. The channel between Yellow Ledge and Hewell's Island Rocks has a depth of from seven to nine fathoms. *Yellow Ledge.*

Pleasant Island Ledge makes off in an easterly direction from the northeastern point of Pleasant Island to the edge of the Main Channel, a distance of three hundred and twenty-five yards, and is not buoyed.

SAILING DIRECTIONS.

I. ***To come into Home Harbor by the Main or South Channel.***—Bring the extreme southern point of Andrews' Island to bear **NW.** ½ **N.** and the centre of Crow Island **W.** by **N.** ¼ **N.**, when the depth will be from sixteen to eighteen fathoms. Steer **NW.** by **W.** ¼ **W.**, passing half a mile to the southward of Halibut Rock, and enter the channel midway between Hewell's Island Rocks and Pleasant Island Ledge. This course continued will lead safely to the anchorage, and there will not be less than eight fathoms until up with the entrance to the harbor. The water shoals gradually towards the head of the harbor until a depth of three fathoms is found, when vessels even of the lightest draught should anchor, as the soundings decrease rapidly from three fathoms to four feet.

Sailing Directions--Home Harbor. In approaching the northwestern point of Pleasant Island keep that point aboard to avoid the three rocky islets which lie on the northern side of the channel, off the southern shore of Hewell's Island. Three fathoms at low water may be taken to within fifty yards of this point.

II. *By the North Channel.*—Steer **W NW.** for the southeastern end of Hewell's Island, passing to the southward of Halibut Rock two hundred yards, and midway between Yellow Ledge and Hewell's Island Rocks. On this course there is not less than eight fathoms; and when abreast of the westernmost Hewell Island Rock and within about one hundred and fifty yards of the southeastern point of the island, the depth will be eight fathoms, and the course **W.** for the northwestern end of Pleasant Island. Anchor at discretion, in from four to eight fathoms. The bottom is soft, and is good holding-ground.

There are many passages through and among the Muscle Ridge Islands, but they are, without exception, unsafe for strangers to attempt. The chart will best show the difficulties which would here beset one unacquainted with the numerous ledges and shoals with which these channels abound.

There is, however, a good anchorage, easy of access for weather-bound vessels, in a deep bight between the Clam Ledges on the north and Hewell's and Grafton's islands on the south. Vessels coming from the northward may round Fogg's Island close-to, and, steering for about the middle of Hewell's Island, anchor at discretion in from three to six fathoms, soft bottom. Vessels coming from the southward may, when abreast of Lower Gangway Ledge, in the Muscle Ridge Channel, in eight fathoms water, steer **E. ¾ N.**, passing between Hurricane Island and Hurricane Ledge with not less than seven fathoms water, and anchor as before, in from three to five fathoms, soft bottom. Or they may round Hurricane Ledge buoy and steer **E. ¾ S.**, with not less than six fathoms, to the anchorage.

SEAL HARBOR

is a bay of irregular shape, lying on the northern side of the Muscle Ridge Channel at its southwestern end, and is contained between Spruce Head Island on the north, White Head Island on the south, and Norton's and Rackliff's islands on the west and northwest,—thus forming a broad cove about a mile long and a little over three-quarters of a mile wide, which is a good harbor of refuge, sheltered from all winds from **SW.** around by **N.** to **E.** Even in southerly winds there is comparatively good shelter, as the force of the sea is greatly broken by the numerous ledges and islands surrounding the entrance. This harbor is difficult of access to strangers, who should always endeavor to make Tennant's Harbor to the southward; or in southerly winds to anchor under the northern shore of Spruce Head Island, in what is known as **False White Head Harbor.**

Spruce Head Island, which forms the northern boundary of the harbor, is the first large island met with on the western side of the Muscle Ridge Channel after passing White Head, and is nearly abreast of the northern end of Hewell's Island. It is about a mile to the northward of White Head, close in with the main shore, lies **NW.** by **W.** and **SE.** by **E.**, and is three-quarters of a mile long, with an average width of a little over a quarter of a mile. It is formed by two rocky heads covered with a scattered growth of stunted spruce and fir, and connected by low land about twenty feet above sea-level. On its southern shore may be seen the buildings and apparatus belonging to the granite-quarries, which are usually in full operation. Between this island and White Head is the entrance to Seal Harbor. The southeastern head of this island is known as **Spruce Head** or **False White Head.** The former is the preferable name, but the latter is often used, and gives the name to False White Head Harbor, under its northern shore.

Spruce Head Island.

The small rocky island lying off the southern shore of Spruce Head, and about one hundred yards from it, is called **Burnt Island.** It is low and covered with a growth of spruce.

Rackliff's and Norton's islands, on the western side of Seal Harbor, are two rocky, wooded islands, lying nearly **N.** and **S.** from each other, and separating this harbor from Rackliff's Bay, to the westward of it. Norton's Island is much the smaller as well as the southernmost of the two, and lies about a quarter of a mile to the westward of White Head Island, extends in a **N.** by **E.** and **S.** by **W.** direction, and is about half a mile long. From Rackliff's Island it is separated by a passage a hundred and seventy-five yards wide, through which five feet may be carried; but there is no channel between it and White Head,—the space being full of rocks and ledges.

Norton's Island.

Rackliff's Island is a mile long in a **NE.** and **SW.** direction, with a width varying from two hundred yards to half a mile. It is highest about the middle, where it is over one hundred feet above sea-level, and to the southeastward shows a somewhat steep and precipitous face. There are several wharves and a few houses on the eastern side of the island, but it is for the most part covered with the usual growth of small fir and spruce, in which respect it is similar to Norton's Island.

Rackliff's Island.

White Head Island (which forms the southern boundary to Seal Harbor) and the light-house on White Head have been already described on page 221, and it is, therefore, not necessary to repeat the description in this place.

Between the western end of Spruce Head Island and the northeastern end of Rackliff's Island the harbor is only about a quarter of a mile wide; and beyond this it terminates in a shallow cove of irregular shape, which is separated into two parts by a thickly wooded hill, about eighty feet high, called Fogg's Hill, between which and the northern end of Rackliff's Island a narrow slue leads into the western part of the cove. The eastern cove, contained between Spruce Head Island and Fogg's Hill, is almost entirely closed at its eastern end by a low, thinly wooded point, called **Fogg's Point**, between which and the northern end of Spruce Head Island there leads, at high water, a very narrow passage into the Muscle Ridge Channel. **Fogg's Hill.**

Seal Harbor is used by coasters as an anchorage in head winds or gales, and also by vessels loading with granite from the quarries on Spruce Head Island.

DANGERS

IN APPROACHING AND ENTERING SEAL HARBOR.

I. ***From the Southward.***—Vessels intending to enter this harbor must follow the directions for the Muscle Ridge Channel until past the buoy on Hay Island Ledge, when they change course to the northwestward, leaving the horizontally-striped buoy on Lower Gangway Ledge to the eastward. On this course for entering the harbor the black spar-buoy on Burnt Island Ledge will first be seen. This ledge lies two hundred and fifty yards **S.** from Burnt Island, and has four feet at mean low water. The buoy is placed in four fathoms off its southern end, is marked No. 3, as a guide to the Muscle Ridge Channel, and is to be left to the northward by vessels bound into Seal Harbor. It may be remarked that about two hundred yards to the westward of this buoy there is *a shoal spot with sixteen feet at mean low water.* ***Burnt Island Ledge.***

On the southern side of the entrance, six hundred yards **NE.** by **N.** $\frac{5}{8}$ **N.** from White Head Light-house, and four hundred and fifty yards **W.** $\frac{7}{8}$ **S.** from the buoy on Hay Island Ledge, lies a very small, rocky islet, called Seal Island. Ledges, bare at low water, extend four hundred yards to the northward from this islet, and shoal water one hundred yards farther. There is a narrow passage between this islet and Hay Island Ledge, through which five fathoms may be taken; but it cannot be used by those who are unacquainted. The best rule that can be given for avoiding the ledges which surround Seal Island, if you are beating, is not to go to the southward of the northern end of Rackliff's Island bearing **NW.** by **N.** $\frac{5}{8}$ **N.** ***Seal Island.***

When abreast of the buoy on Burnt Island Ledge there will be seen ahead, nearly half a mile off, two spar-buoys,—one red and one black. The black spar is on the southern side of the channel and marks the northern extremity of Long Ledge, a bare rock about one hundred and fifty yards in diameter and surrounded by shoal water. The buoy is marked No. 1, and is placed in eighteen feet water about an eighth of a mile to the northward of the bare rock. Good anchorage may be found between Long Ledge and the ledges off Seal Island in from ten to fourteen feet at mean low water. ***Long Ledge.***

The red spar-buoy, which is marked No. 2, is placed in eighteen feet off the southern end of Spruce Head Island Ledge, which makes off from the southwestern end of Spruce Head Island in a southerly direction for about two hundred yards, and has from one to three feet upon it at mean low water. The buoy on this ledge and that on Long Ledge are the last met with in the harbor, and beyond them good anchorage may be found in from six feet to four fathoms anywhere between White Head, Norton's and Rackliff's islands on the south and west, and Spruce Head Island on the east,—care being taken, however, not to approach the shores of these islands too closely. Anchorage in from eight feet to three fathoms may be found by steering up between Spruce Head Island on the east and the low rocky islet off the northeastern end of Rackliff's Island on the west, and coming to when exactly between them; but it is not customary to go beyond the first-mentioned anchorage. ***Spruce Head Island Ledge.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING SEAL HARBOR.

I. ***From the Southward.***—Continue the course for entering the Muscle Ridge Channel (leaving the bell-buoy on The South Breaker about two hundred yards to the eastward) until past White Head, when alter the course to **NE.** $\frac{1}{2}$ **E.**, and continue it until past the red spindle on Yellow Ledge, which leave to the eastward three hundred and fifty yards off, and Hay Island Ledge to the westward two hundred yards. When within three hundred yards of the Lower Gangway buoy, with White Head Light-house bearing **SW.** by **W.** $\frac{1}{2}$ **W.**, steer **NW.** by **N. Northerly** into the harbor. Continue this course until between Long Ledge buoy and Spruce Head Island Ledge buoy, passing two hundred and fifty yards to the eastward of the former and one hundred and fifty yards to the westward of the latter. After passing these buoys anchor in three and a quarter fathoms, soft bottom, and there will not be less than that water on any of the sailing-lines given above.

II. ***Coming from the Eastward through the Two-Bush Channel, to enter Seal Harbor.***—Bring Tennant's Harbor Light-house to bear **NW.** by **W.** $\frac{3}{4}$ **W.** and steer for it, carrying not less than nine fathoms, and passing five-eighths of a mile to the northward of The Northern Triangles and a quarter of a mile to the southward of Crow Island Ledges. Continue this course until White Head Light-house bears **N.** by **W.**, when there will be twenty-one fathoms, muddy bottom, and you must steer **N.** $\frac{1}{4}$ **W.**, passing a quarter of a mile to the eastward of the dry part of The South Breaker, about three hundred and fifty yards to the westward of the spindle on Yellow Ledge, and carrying not less than nine fathoms water. When White Head Light-house is abeam, bearing **W.** $\frac{1}{4}$ **S.**, with twelve fathoms, soft bottom, steer **NE.** by **N.** $\frac{1}{2}$ **N.**, passing about one hundred yards to the eastward of the black buoy on Hay Island Ledge and carrying not less than seven fathoms. When well past this buoy, and in about five fathoms water, steer **NW.** by **N. Northerly,** and follow the directions given above.

DANGERS

IN APPROACHING AND ENTERING SEAL HARBOR.

II. ***From the Northward.***—Vessels coming through the Muscle Ridge Channel from the northward pass between Spruce Head Island and a small grassy island lying to the northward of Grafton's, which is called **Hurricane Island.** (See page 227.) In so doing a red spar-buoy, marked No. 2, is left to the eastward,—the mid-channel line leading about a quarter of a mile from it. This buoy is on Hurricane Ledge, which is bare at low spring tides, has two feet at mean low water, and lies in the middle of the channel. From Spruce Head Island it bears **SE.** $\frac{1}{4}$ **E.**, distant eight hundred yards; from Hurricane Island **NW.** $\frac{1}{4}$ **N.**, nearly half a mile; and from White Head Light-house **NE.** by **E.** $\frac{1}{2}$ **E.**, a mile and a third distant. The buoy is placed in two fathoms on its northwestern side, and it is usual to pass to the westward of it. A channel equally deep and less obstructed, however, will be found leading to the eastward of this ledge, between it and Hurricane Island. A spindle, painted red and black in horizontal stripes, which would enable vessels to use either channel with safety, should be placed here instead of the buoy.

Hurricane Ledge.

After passing the buoy on Hurricane Ledge the course leads towards the black buoy on Burnt Island Ledge, passing to the westward of the horizontally-striped buoy on Lower Gangway Ledge, which lies in the Muscle Ridge Channel, and has been already described on page 249.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING SEAL HARBOR.

III. ***From the Northward.***—Coming from the northward through the Muscle Ridge Channel, and bound into Seal Harbor, when abreast of the black buoy (No. 5) on Garden Island Sunken Ledge, with Hurricane Island bearing **S.** $\frac{3}{4}$ **W.**, steer **SW.** by **W.** $\frac{1}{2}$ **W.**, aiming to pass about one hundred and fifty yards to the eastward of the black buoy on Burnt Island Ledge and heading nearly for Seal Island. Continue this course until White Head Light-house bears **SW. Westerly,** when steer **NW.** by **N. Northerly** into the harbor, and follow the directions previously given. These courses pass about four hundred yards to the westward of Hurricane Ledge buoy; three hundred yards to the westward of the striped buoy on Lower Gangway Ledge; and one hundred and fifty yards to the eastward, and two hundred yards to the southward, of Burnt Island Ledge buoy.

Or, wishing to pass to the Eastward of Hurricane Ledge and enter Seal Harbor.—From abreast of the black buoy (No. 5) on Garden Island Sunken Ledge, with Hurricane Island bearing **S.** $\frac{3}{4}$ **W.**, as before, steer to the southward so as to pass about midway between Hurricane Island and the buoy on Hurricane Ledge. When exactly between this buoy and the island, with about fourteen fathoms, soft bottom, steer **W SW.** for seven-eighths of a mile, passing two hundred yards to the southward of the buoy on Lower Gangway Ledge, and carrying not less than seven fathoms water. When this buoy bears **N.** by **E.** $\frac{1}{4}$ **E.**, and you are in about eight fathoms, steer **NW.** by **N. Northerly,** and follow the directions previously given.

FALSE WHITE HEAD HARBOR,

formed by the curve in the northern shore of Spruce Head Island, is only used as a harbor of refuge in southerly gales, or by vessels caught by a head tide and a light wind when bound through the Muscle Ridges; and affords secure anchorage, in two fathoms at low water, about three hundred and fifty yards from shore. The approach to it from the northward and northeastward is obstructed by three islands lying nearly N. and S. from each other and surrounded by dangerous ledges. These islets lie off Thorndike's Point, the southwestern point of entrance to Weskeag River, and are known, severally, as Eben's, Tommy's and Garden islands.

Eben's Island, the northernmost, is about four hundred yards to the southward of Thorndike's Point; is about two hundred and fifty yards in diameter, low, bare and rocky, and surrounded by shoals. Eight feet may be carried between it and Thorndike's Point. Tommy's Island lies a third of a mile to the southward of Eben's Island, and is also bare and rocky. It is surrounded by ledges and should not be approached closely on either side. **Eben's and Tommy's Islands.**

Garden Island lies eight hundred yards **S SE.** from Tommy's Island, and is very irregular in shape, rocky, from twenty to thirty feet high, and surrounded by ledges. The northern entrance to False White Head Harbor lies between this island and Tommy's Island, and through it not less than three fathoms may be taken to within six hundred yards of the head of the cove. The middle of the passage is obstructed by dangerous ledges, and it is necessary to keep either the southern shore of Tommy's Island or the northern shore of Garden Island aboard to avoid them. **Garden Island.**

SAILING DIRECTIONS.

No stranger should attempt to enter this harbor from the northward by passing between Tommy's and Garden islands. The best plan is to enter it between the northeastern end of Spruce Head Island and the black spar-buoy (No. 5) on Garden Island Sunken Ledge. (See page 250.) There is nothing in the way in coming in by this channel, and it is only necessary to look out for *Garden Island Shoal*, which makes off from Garden Island to the southward for about three hundred and fifty yards, and is marked by a red spar-buoy (No. 2) placed on its southern side in five fathoms. The course in passes between this buoy and *a small detached spot, with ten feet at mean low water*, lying about six hundred yards to the southwestward of it and about four hundred yards from the Spruce Head shore. There is from three to five fathoms between this shoal spot and Spruce Head Island. To enter the harbor from the Muscle Ridge Channel, round the black buoy on Garden Island Sunken Ledge close-to, and steer **NW.** by **W.** $\frac{3}{4}$ **W.** for about half a mile, and anchor at discretion. On leaving the harbor do not go to the northward of the buoy on Garden Island Shoal bearing **SE.** by **E.** $\frac{1}{4}$ **E.**, in order to avoid the southern extremity of the dangerous ledges lying between Garden and Tommy's islands.

WESKEAG RIVER.

The entrance to this river is about two miles to the northward of Spruce Head Island and a mile and three-quarters to the westward of Ash Point. It is a crooked and shallow stream, about two-thirds of a mile wide at its mouth, but rapidly diminishing in width until, at South Thomaston, it is but little over fifty yards wide. Its width at the mouth is also still further contracted by an island a quarter of a mile long, called Spaulding's Island,—the available channel being thus diminished to a little over four hundred yards.

Thorndike's Point, the southwestern point of entrance to Weskeag River, is one hundred feet high and diversified with woods and cleared land. Its eastern face is rocky and steep, and the point is in some places bold-to; but there are many dangerous outlying ledges which render an approach to it unsafe for strangers. **Thorndike's Point.**

Spaulding's Island lies **E NE.** and **W SW.**, is about a quarter of a mile long, twenty feet high, and very irregular in shape. Its southern shore, which is the only side of the island shown to vessels bound in, appears barren and rocky, covered with a scant and sickly growth of yellowish grass, dotted at long intervals with lone spruce and fir trees, and with bare ledges cropping out all over the surface. On the summit, however, there is a thin growth of spruce, birch and maple, and some trees on the northern side of the island, which will appear over the summit. It is surrounded by bare and sunken ledges, none of which are buoyed,—thus rendering the approaches to the river very unsafe for strangers. **Spaulding's Island.**

Otter Point, the eastern point of entrance to the river, is about thirty feet high, barren and rocky, and has a single small spruce tree on its southern extremity.

The shore-line on both sides of Weskeag River is very irregular in outline, and the channel tortuous and narrow. Nothing but a general description of the shores can be given, and sailing directions would be of little avail. On the eastern side, from Otter Point, the general course of the shore is about **NW.** for about two-thirds of a mile to the entrance to Ballyhac Cove, a large cove, dry at low water, running about **NE.** for five-eighths of a mile, and about a quarter of a mile wide. Almost exactly opposite to it, on the western shore, is another and smaller cove, contained between Cushing's Point (the northern extremity of Thorndike's Point) and Crouch's Folly, which is opposite to Birch Point, the northern point of entrance to Ballyhac Cove. **Ballyhac Cove.**

Cushing's Point is barren, rocky, and crowned with spruce trees. **Crouch's Folly** is also rocky and fringed with a thick growth of bushes, but on top is cleared and composed for the most part of grass-land. **Birch Point** is a high clay head with precipitous, water-worn faces, and is crowned with small birch trees.

On the northern side of Crouch's Folly makes in a large creek to the westward, called **Sharkeyville Creek.** It is of little importance,—being very shallow; but there is a granite quarry at its head which is in partial operation. A

Hayden's Point. low, grassy islet lies on the eastern edge of the flats off the mouth of this creek, and marks the western limits of the channel of Weskeag River, which passes between this island and Hayden's Point, on the eastern shore of the river. This point is exactly opposite to the mouth of Sharkeyville Creek, and is formed by a sand and clay cliff, crowned with bushes and a thick growth of small stunted trees.

At Hayden's Point the river turns abruptly to the northeastward, running **NE.** for about five-eighths of a mile to **South Thomaston Bridge,** which marks the head of navigation. On this course it runs between tolerably steep banks, fringed with bushes and backed by grass-land and cultivated fields. The village of **South Thomaston** occupies both banks of the river. It is of little importance,—being supported mainly by the granite quarries in its vicinity and on the Muscle Ridge Islands.

Strangers should never attempt to enter Weskeag River, and no intelligible sailing directions can be given. The chart will be found the best guide; but a careful scrutiny of it will show the difficulty of threading the intricate channels among the various islets and rocks obstructing the river.

ROCKLAND HARBOR.

This harbor is the first met with on the western side of the bay, to the northward of the Muscle Ridge Channel, and is formed by a large cove, whose northern point is called Jameson's Point and its southern point Owl's Head. It lies exactly opposite to North Haven Island, (the northernmost of the Fox Islands,) is a mile and a quarter long and a mile and a half wide. The city of Rockland, an enterprising and thriving town, occupies the western shore of this harbor. Two prominent spurs of land, known, respectively, as Crockett's Point and Atlantic Point, make out from this western shore, forming part of the wharf-line of the town, with shallow coves on both sides.

Jameson's Point, the northern point of the harbor entrance, is of moderate height, sloping gently to

Jameson's Point. the water, and has scattered groves of trees here and there over its surface. On its summit are a few houses, and on its southern extremity is an earthwork whose tall flag-staff forms a conspicuous mark.

Owl's Head, which forms the southern point of entrance to Rockland Harbor and the northern promontory of Muscle Ridge Channel, has been already described on page 228. It is high, round, rocky and precipitous, with

Owl's Head and Light-house. a very few stunted spruce trees growing out of its almost perpendicular sides. It is surmounted by a light-house known as Owl's Head Light-house, which shows a fixed white light, of the fourth order of Fresnel, from a height of one hundred and five feet above sea-level, visible fifteen miles. The light-tower is only nineteen feet high, and is squatted (so to speak) upon the pitch of the point. To the left of the tower, in the hollow, is situated the keeper's dwelling, which is painted white, as is also the tower.

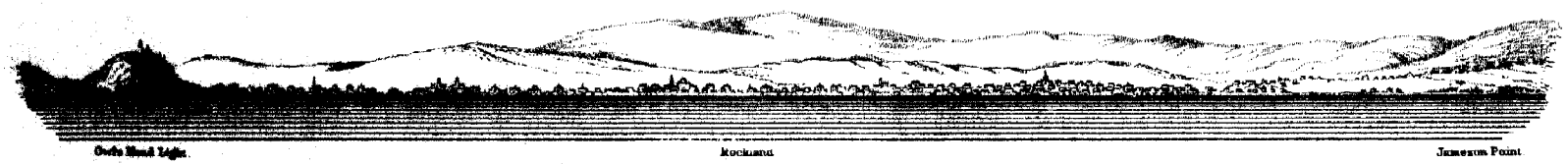
Three-eighths of a mile to the westward of Owl's Head the southern shore of the harbor is penetrated by a narrow cove, about four hundred yards long, called **Deep Cove,** affording shelter for light-draught vessels. Nearly a quarter of a mile to the westward of this, and separated from it by a projecting point of land, which is about thirty feet high and well wooded, lies the entrance to **Broad Cove,** an irregularly-shaped cove, a little over a quarter of a mile in diameter and entirely unobstructed. It affords excellent shelter during easterly or southerly winds with anchorage in from twelve feet to four fathoms.

Crockett's Point, the northernmost of the two points on the western side of the harbor, is the site of several lime-kilns. A long pier, called **Commercial Wharf,** and a warehouse, used by the coastwise steamers and the Carver's

Crockett's and Atlantic Points. Harbor steam-packets, occupy the southern end of the point. Atlantic Point is the southernmost of the two points, and has the deepest water close to it. A large wharf, called **Atlantic Wharf,** which has a warehouse upon it, extends out from this point, and is used as the landing-place of the Boston and Bangor and Portland and Bangor steamers. Hence it is often called **Steamboat Wharf.**

Westward from Jameson's Point the shore curves away to the northward and westward, forming a large but very shallow cove. The land is here low, and from the southern side of the harbor the **Camden Hills** are visible over it. The town itself is situated at the foot of the hills, which lie along the western shore, rising to a considerable height. Some of them are cleared and cultivated to their summits, while others are crowned with a dense growth of spruce and fir. Westward from Atlantic Point, however, and thence to the southwestern point of the harbor, the hills retreat back a considerable distance and the land is much lower. The southern shore is of various heights, attaining its greatest elevation about midway between the southwestern end of the bay and Owl's Head. At this point it is thickly wooded, with a few houses on the slopes and one or two on the crest of the hills. But very little of this southern shore is cleared,—the settlements being mostly along Owl's Head Bay, on the southern side of the peninsula.

Rockland Harbor is not well protected from easterly winds,—the only land which breaks the force of the wind and sea being the Fox Islands, distant six nautical miles from Owl's Head. The holding-ground is good, however, and comparatively well-sheltered anchorage can be found in the bight to the southeastward of Atlantic Point and near Owl's Head. **Rockland** is a town of little over seven thousand inhabitants. The trade is principally in ship-building and lime, but there is some lumber business and a small fishing interest.



View of Rockland Harbor from Owl's Head Light to Jameson Point, Owl's H'd L't bearing W.by N. distant 1½ Miles.

DANGERS

IN APPROACHING AND ENTERING ROCKLAND HARBOR.

I. ***From the Southward, through the Muscle Ridge Channel.***—In coming through Owl's Head Bay, bound to Rockland, the first danger met with lies off Dodge's Point, on the western side of the passage, and is marked by an iron spindle painted black, with cage on top. This is *Dodge's Point Ledge*, which is bare until nearly high water, and lies about two hundred and fifty yards to the eastward of Dodge's Point. Pass to the eastward of it, and a black can-buoy of the second class will be seen off Owl's Head. This is on Owl's Head Ledge, (see page 251,) which makes off to the eastward from Owl's Head, and is bare at low water. The buoy is placed in four fathoms about sixty feet to the eastward of the ledge, is marked No. 1, and is to be left to the westward. ***Owl's Head Ledge.***

After passing Owl's Head Ledge the shore is bold-to, and it is safe to keep within three hundred yards of the southern shore until well up in the bight; but when well to the westward of Owl's Head look out for Spear's Rock, which has four feet and three-quarters at mean low water. This dangerous rock, which is exactly in the course of the Boston steamers when bound out, lies off **Halfway Point**, about three hundred and fifty yards from the shore. There is over three fathoms inside of it, but there are so many ledges and scattered rocks as to render it extremely dangerous to pass to the southward of it. A black spar-buoy (No. 1) is placed in thirty feet water just to the northward of this ledge. ***Spear's Rock.***

Lowell's Ledges also lie off Halfway Point, but to the westward of Spear's Rock. They consist of a number of rocks, some bare at low water and some with from one to four feet upon them, which extend to the northeastward three hundred yards from Halfway Point. There is no channel between these ledges and the shore, but a narrow passage exists between them and Spear's Rock. ***Lowell's Ledges.***

When past Lowell's Ledges the next danger met with is called South Ledge, consisting of two small detached shoals, separated by a narrow passage about one hundred and twenty-five yards wide, through which four and a half fathoms may be taken at mean low water. The southernmost is about one hundred yards in diameter, has seven feet upon it at low water, and is marked by a red spar-buoy (No. 2) placed in four fathoms on its southern side. It is the rule for vessels coming from the southward to pass to the southward of it. On passing Owl's Head, three hundred yards from the shore, this shoal will be exactly in range with Crockett's Point; so that should the buoy at any time be absent, this will be a guide to avoid it. It bears from the earthwork on Jameson's Point **SW.** by **S.** ½ **S.**, and from the Steamboat Wharf **E.** ¾ **N.** The northernmost of the two shoals lies about one hundred and fifty yards due **N.** from the southern ledge, and has, according to the charts, a least depth upon it of fifteen feet; but it is reported that a depth of only eight feet has been found upon it at extreme low tides. It is about seventy-five yards in diameter; and on its northern side, in four fathoms, is placed a black spar-buoy (No. 5). No stranger should attempt to pass between the two buoys. ***South Ledge.***

Close in with the wharf-line of Rockland, and about three hundred yards to the southward of Atlantic Wharf, lies Railway Ledge, which has a reported depth of three feet at low tides upon it, and is marked by a black spar-buoy (No. 3) placed in eighteen feet water to the southeastward of it. This is the only danger met with by vessels approaching the wharf-line of the town, as elsewhere the water shoals gradually towards the shore and vessels need not fear to stand well in. If standing into the bight in the southwestern end of the harbor, however, beware of *Seal Ledge*, which is dry at low water, and lies nearly three-eighths of a mile **S.** ⅛ **E.** from the buoy on Railway Ledge, and seven-eighths of a mile **SW.** ⅛ **W.** from the red buoy on the southern end of South Ledge. Vessels may safely run into the bight, as the water shoals gradually, and it is only necessary to avoid Seal Ledge. ***Railway Ledge.***

Vessels coming from the southward and intending to anchor to the northward or eastward of Crockett's Point must look out for Jameson's Point Ledge, which has nine feet water, and lies about half a mile to the eastward of Crockett's Point. It extends **N.** by **E.** and **S.** by **W.**, and is marked by a spar-buoy, painted red and black in horizontal stripes, placed close to the ledge, upon its southwestern side. The best water between this buoy and Crockett's Point is fifteen feet, and it is not usual for any but vessels of light draught to pass inside of it. ***Jameson's Point Ledge.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING ROCKLAND HARBOR.

I. ***Coming from the Southward, through the Muscle Ridge Channel.***—When abreast of the black can-buoy off Owl's Head Ledge, and in about six fathoms water, steer **N.** by **W.** until Owl's Head Light-house bears **S.** ¾ **W.** or Atlantic Wharf **W.** by **N.** ¼ **N.**, when steer that course into the harbor, and anchor at pleasure. This course has all the way from three to fifteen fathoms, and passes about an

Sailing Directions--Rockland Harbor. eighth of a mile to the northward of Spear's Rock and about a quarter of a mile to the southward of South Ledge. These directions serve for both day and night. At mean low water eighteen feet may be carried to within two hundred yards of Atlantic Wharf, and the wharf has thirteen feet alongside of it.

II. ***Coming from the Southward, through West Penobscot Bay.***—On the **N.** $\frac{3}{4}$ **E.** course up the bay, when Owl's Head Light-house bears **NW.** by **N.** $\frac{1}{4}$ **N.**, steer **NW.** by **N.** $\frac{7}{8}$ **N.** until the light-house bears **S.** by **W.** $\frac{1}{4}$ **W.**, when steer for Atlantic Wharf. Or you may steer **W.** by **N.** $\frac{3}{4}$ **N.**, which will lead between the northern end of South Ledge and Jameson's Point Ledge.

III. ***Coming across West Penobscot Bay from Fox Islands Thoroughfare.***—When abreast of the red spindle on the northern end of Dogfish Ledges, distant from it about three hundred yards, steer **W.** by **N.** $\frac{3}{4}$ **N.** across the bay. In crossing the bay the least water is fourteen fathoms. When abreast of Owl's Head Light-house, having it bearing **S.** by **W.** $\frac{1}{4}$ **W.**, steer for Atlantic Wharf and anchor, as before directed. *Or*, the **W.** by **N.** $\frac{3}{4}$ **N.** course continued will lead safely up the harbor, passing about midway between the black buoy on the northern end of South Ledge and the horizontally-striped buoy on Jameson's Point Ledge.

DANGERS

IN APPROACHING AND ENTERING ROCKLAND HARBOR.

II. ***Coming from the Northward, through West Penobscot Bay.***—In coming from the northward the first danger met with lies off Jameson's Point, and is marked by a red nun-buoy. It is called Jameson's Point Shoal, and extends from that point to the southward about three hundred yards. The buoy is marked No. 4, and placed in twenty feet water on the southern end of the shoal. After passing it either steer towards Crockett's Point, thus passing between Jameson's Point Ledge and South Ledge, or keep to the southward of South Ledge, and steer for Atlantic Wharf. In the former case, when abreast of Jameson's Point Shoal buoy the red and black spar-buoy on Jameson's Point Ledge will be seen to the westward and in range with the northern end of Crockett's Point.

Jameson's Point Shoal.

Jameson's Point Ledge. Jameson's Point Ledge has nine feet water, lies **N.** by **E.** and **S.** by **W.**, is three-quarters of a mile from the buoy on Jameson's Point Shoal and half a mile from Commercial Wharf. The red and black spar-buoy is placed on its southern end in about fourteen feet water. Four fathoms can be taken between this buoy and South Ledge.

South Ledge. South Ledge lies about eight hundred yards to the southward of Jameson's Point Ledge, and, as before mentioned, consists of two small detached shoals, separated by a narrow passage, with four and a half fathoms in it. The northern shoal has fifteen feet, and is marked by a black spar-buoy (No. 5) placed on its northern side in four fathoms. A red buoy (No. 2) is placed in four fathoms on the southern end of the southernmost shoal, which has seven feet upon it at mean low water, and bears from the earthwork on Jameson's Point **SW.** by **S.** $\frac{1}{2}$ **S.**, and from Atlantic Wharf **E.** $\frac{3}{4}$ **N.**, nearly three-quarters of a mile distant.

Spear's Rock. If passing to the southward of South Ledge, do not stand too close to the southern shore of the harbor in the vicinity of Halfway Point, to avoid Spear's Rock, which has only four feet and three-quarters upon it, and lies about three hundred and fifty yards from Halfway Point. There is good water inside of it, but the passage is not practicable,—being narrow and full of shoals. A black spar-buoy (No. 1) has been placed on the northern side of this ledge in five fathoms water.

Lowell's Ledges. Lowell's Ledges also lie off Halfway Point, but to the westward of Spear's Rock. They consist of a number of rocks, some bare at low water and some with from one to four feet upon them, which extend in a northeasterly direction to a distance of three hundred yards. There is no channel between them and the shore, but a narrow passage exists between them and Spear's Rock. When past these ledges you may steer for Atlantic Wharf with safety, taking care to avoid *Railway Ledge*, with three feet, which lies close in with the wharf-line of the town and is marked by a black spar-buoy (No. 3).

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING ROCKLAND HARBOR.

IV. ***Coming from the Northward, through West Penobscot Bay.***—When abreast of **Ram Island**, (which is the small rocky island nearly a mile and a half to the northward of Jameson's Point,) give it a berth to the westward of about nine hundred yards, (when you will pass it in thirteen fathoms,) and steer **SW.** by **S.** $\frac{1}{2}$ **S.** until the southern extremity of Jameson's Point is abeam and

Commercial Wharf bears W. ½ S. There will then be ten fathoms. Now steer W. ½ S. for the wharf, if intending to pass to the northward of South Ledge; or SW. by W., if intending to pass to the southward of that ledge. In the former case there will be fifteen feet to the anchorage, and in the latter from three to seven fathoms. *Or*, bring Owl's Head Light-house to bear S. by W. ¼ W. and steer for it until the southern extremity of Jameson's Point bears W. ½ N.; when there will be twenty-one fathoms, and you must steer W. ½ S. for Commercial Wharf to pass to the northward of South Ledge, or W. by S. ¾ S. to pass to the southward of it.

Sailing Directions--Rockland Harbor.

Passing to the northward of South Ledge, you will leave the buoy on Jameson's Point Ledge about one hundred and fifty yards to the northward and the black buoy on the northern end of South Ledge about four hundred yards to the southward; while in entering to the southward of South Ledge you will pass about two hundred yards to the southward of the red buoy on the southern end of that ledge. *Or, at night*, bring Owl's Head Light-house to bear S. ¾ E. and Jameson's Point W. ½ N., and steer W. ¾ S. for Commercial Wharf, anchoring in three and a half fathoms, sticky bottom. *Or*, wishing to pass to the southward of South Ledge, steer W. ¾ S., as before, until Owl's Head Light-house bears SE. ½ S., when SW. by W. ¼ W. leads safely to the anchorage or to Atlantic Wharf.

Wishing to anchor under the northern shore, round the nun-buoy on Jameson's Point Shoal close to, haul to the westward, and anchor in three fathoms two or three hundred yards from the shore.

There is good beating-room in the channels to the northward and southward of South Ledge, and there is not less than fourteen feet water in the northern and three and a half fathoms in the southern channel, except upon the ledges described above.

LIGHT-HOUSE.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Owl's Head Light-house	44 5 31	69 2 39	4 36 10.6	Fixed.	105	15

TIDES.

Corrected Establishment	11h 5m
Mean Rise and Fall of tides	9.6 ft.
Mean Rise and Fall of Spring tides	10.1 ft.
Mean Rise and Fall of Neap tides	9.1 ft.
Mean duration of Rise	6h 19m
Mean duration of Fall	6h 6m
Mean duration of Stand	0h 38m

ROCKPORT HARBOR.

The entrance to this harbor is about two miles and a half above Jameson's Point, and the course along shore from Rockland Harbor is NE. by N. ½ N. It is formed by an arm of the bay running N. and S., a mile and a half long, three-quarters of a mile wide at its mouth and two hundred and fifty yards at its head, where is built the village of Rockport.

Beauchamp Point.

The eastern point of entrance to the harbor is called Beauchamp Point, which is the southern extremity of the peninsula separating Rockport from Camden. It is sixty feet high, with gently sloping surface, and is partly cleared and partly wooded with spruce, birch and oak. On its eastern and western sides it is bold-to; but it must not be approached from the southward by strangers, on account of the numerous shoals and ledges extending from it in a southerly direction, by which it is connected with Indian Island, lying nearly two hundred yards to the southward of the point. Nearly three-eighths of a mile to the northeastward of Beauchamp Point is **Deadman's Point**, about thirty feet high, bare of trees, and cultivated; and between the two makes in a semicircular cove nearly four hundred yards in diameter, which affords anchorage in from twelve feet to three fathoms and is entirely unobstructed.

Indian Island and Light-house.

Indian Island is small, bare, and about two hundred and fifty yards long. At its southern end it rises to a height of about sixty feet, and its eastern, southern and southwestern faces are rather precipitous. The surface is grassy and bare of trees, and there is a small house at each end of the island. There is no passage between it and Beauchamp Point,—the space between them being filled with sunken ledges, as before remarked. On the southern end of this island is built the light-house, which is the guide to Rockport Harbor. It is a square brick tower, thirty feet high, and painted white, showing a fixed red light, of the fifth order, from a height of forty-seven feet

above the sea, visible twelve nautical miles. The keeper's house is a brick dwelling with frame addition, painted white; and the geographical position of the light-house is

Latitude.....44° 9′ 54″ N.
Longitude.....69° 3′ 22″ W.

Lowell's Rock. About two hundred yards to the southward of Indian Island lies Lowell's Rock, a bare, rocky islet, with no safe passage between it and the island. It is about one hundred and fifty yards long, and is easily recognized by the red spindle, with cage and ball on top, which is placed on the ledges about fifty yards to the southward of it.

The western shores of Rockport Harbor are mainly composed of steep hills, partly cultivated and partly wooded. In some places the woods are extremely thick, in others they are in clumps among cultivated fields. The eastern shores are not so high as the western,—the crests of the hills being only two hundred feet above the sea; whereas the hills on the western shore rise as high as five hundred and forty feet. The land is cleared and cultivated and dotted with small clumps of trees, while above all tower the **Camden Hills**, the most prominent landmarks for the approach to West Penobscot Bay. In coming from the southward the most important of the hills will show as follows: **Mount Pleasant**, as a smooth, round mountain of regular shape, farthest to the westward; **Ragged Mountain**, easily distinguished by its peculiar hump; then **Mount Beattie**; and, higher than all, **Megunticook**, which is thirteen hundred and fifty feet above the sea.

The village of **Rockport** contains about two thousand inhabitants, and the trade is principally in lime.

DANGERS

IN APPROACHING AND ENTERING ROCKPORT HARBOR.

I. ***Coming from the Southward, through West Penobscot Bay.***—Vessels from the southward, intending to enter Rockport Harbor, pass either to the northward of Porterfield's Ledge, between it and Lowell's Rock, or to the southward between it and the western shore of the harbor. On these courses there is nothing in the way; but when to the northward of Jameson's Point, (Rockland Entrance,) if standing to the westward on a wind, look out for Ram Island Ledge,—the black spar-buoy on which will be seen a little to the northeastward of the island. This ledge, which makes off from the northeastern end of Ram Island (see page 229) to a distance of nearly three hundred yards, is awash at low water. The buoy is marked No. 1, and is placed in thirty feet off the northeastern end of the shoal. To the southward of the buoy, distant about nine hundred yards, and off Brewster Point, lies *Brewster Point Ledge*, before described on page 236. It is a small detached rock, bare at low water, with a narrow passage between it and Brewster Point, through which eight feet may be taken. To avoid both this and Ram Island Ledge, if beating, do not stand to the westward of Indian Island Light-house bearing **N NE.** until to the northward of the buoy off Ram Island. The sailing-lines pass well to the eastward of both ledges.

Ram Island Ledge.

Well to the northward of the black buoy on Ram Island Ledge, and standing apparently in the middle of the entrance to the harbor, will be seen a stone beacon with mast and barrel on top. This is on Porterfield's Ledge,—the southernmost of the shoals to the southward of Beauchamp Point,—which is dry at low water but bold-to on all sides. From the spindle on Lowell's Rock it bears **S. by W. ½ W.**, distant one hundred yards, and from Beauchamp Point it is distant seven-eighths of a mile in the same direction. The beacon, which is square and twenty feet high, is known as **Porterfield's Ledge Beacon**, and is a guide to vessels coming either from the northward or southward;—for on the northern side of the ledge, between it and Lowell's Rock, is an excellent channel half a mile wide, with from eight to eleven fathoms, which is used by vessels coming from the northward. The channel from the southward leads to the westward of this ledge with from eight to twelve fathoms and bold shores.

Porterfield's Ledge.

The red spindle, seen about half a mile to the northward of Porterfield's Ledge Beacon, is off Lowell's Rock, described above, which is bare at low water, lies about two hundred and fifty yards to the southward of Indian Island, and marks the northern limits of the northern channel. The spindle, which is of iron and painted red, is surmounted by a cage eleven feet long, with a ball on top, and is to be left to the eastward by vessels coming from the southward and to the northward by those using the northern channel.

Lowell's Rock.

When to the northward of the spindle on Lowell's Rock, bound into the harbor, there will be seen close in with the eastern shore another red spindle. This is on Seal Ledge, which lies about eight hundred yards to the northward of Beauchamp Point and about two hundred yards from shore and is bare at half-tide. The spindle is similar to that on Lowell's Rock, except that it has no ball on top,—being surmounted by a cage only. About five hundred yards to the northward of this is another red spindle, close to the eastern shore of the harbor; but it is not upon any particular ledge,—being merely a guide to vessels approaching the eastern shore.

Seal Ledge.

When up with the red spindle on Seal Ledge, a stone beacon, pyramidal in shape, will be seen on the western side of the harbor, bearing about **N NW.** This is on Harbor Ledge, which has ten feet at low water, lies six hundred yards **NW. by N.** from the

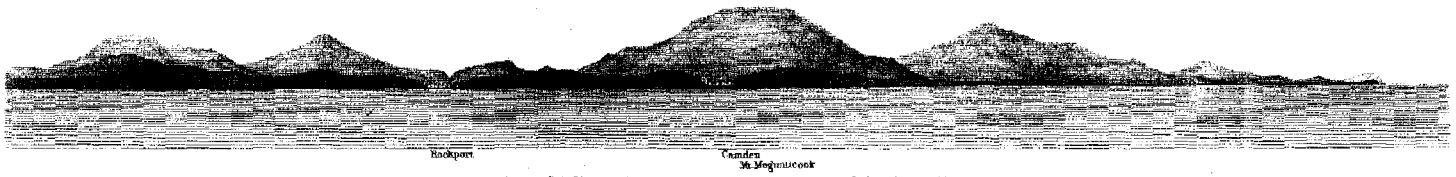
Harbor Ledge.



Entrance to Weskeag River, from near Garden Island Ledge, (Muscle Ridge Channel.)



Owl's Head Bay from the Southward, the Lt.Ho.bearing N.E.by N.,distant 2½ Miles.



Approaches to Camden and Rockport, Negro Island Lt.Ho.bearing N.½ E,distant 6½ Miles.

red spindle to the northward of Seal Ledge and about two hundred and fifty yards from shore. The beacon is surmounted by a mast with barrel on top, painted white, and is known as **Harbor Ledge Beacon.**

One hundred and fifty yards **NW.** by **N.** ½ **N.** from Harbor Ledge Beacon will be seen a black spindle surmounted by a cage and ball. This is on Shipyard Ledge, which extends off from the western shore, at the southern end of the wharf-line of Rockport. Above this ledge the harbor becomes narrow and shoal. Eleven feet at low water may, however, be carried to within one hundred yards of the wharves at its head. The vessels frequenting the harbor usually lie alongside the wharves, where they are aground at low water, but perfectly safe. ***Shipyard Ledge.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING ROCKPORT HARBOR.

I. ***Coming from the Southward, through West Penobscot Bay.***—On the **N.** ¾ **E.** course through the bay, when Owl's Head Light-house bears **NW.** by **N.** ¼ **N.**, distant nearly four miles, and Stand-in Point (on the northern side of the entrance to Fox Islands Thoroughfare) **NE.** ¾ **N.**, distant about four miles and an eighth, steer **N.** by **W.** ¼ **W.**, which will lead safely up to the entrance to the harbor, passing about five-eighths of a mile to the eastward of the black buoy on Ram Island Ledge and four hundred yards to the *southward* of Porterfield's Ledge Beacon, and carrying not less than thirteen fathoms. On this course, when abreast of the beacon, with Indian Island Light-house bearing **NE.** by **N.** ⅝ **N.**, distant a little over three-quarters of a mile, steer **N.** ½ **E.** up the harbor, passing six hundred yards to the westward of Lowell's Rock spindle, about a quarter of a mile to the westward of the spindle on Seal Ledge, and nearly one hundred yards to the eastward of Harbor Ledge Beacon. This course carries not less than four fathoms to within three hundred yards of the head of the harbor, where you may anchor at pleasure.

Or, wishing to pass to the northward of Porterfield's Ledge; when, on the **N.** ¾ **E.** course up the bay, Owl's Head Light-house bears **NW.** by **N.** ¼ **N.** and Stand-in Point **NE.** ¾ **N.**, as before, steer **N.** by **W.** for Indian Island Light-house until within about seven-eighths of a mile of it, with Porterfield's Ledge Beacon bearing **NW.** by **W.** ½ **W.**, distant three-eighths of a mile. Now steer **NW.** by **N.** ⅛ **N.**, passing a quarter of a mile to the northward of Porterfield's Ledge and about the same distance to the southward of the spindle on Lowell's Rock and carrying not less than ten fathoms. On this course, when Indian Island Light-house bears **E.** by **N.** ½ **N.**, distant six hundred and fifty yards, steer **N.** ½ **E.** up the harbor, and follow the directions previously given.

II. ***Coming across West Penobscot Bay from Fox Islands Thoroughfare.***—On the course **SW.** ⅝ **W.** through the Thoroughfare, when abreast of the red spindle on the northern end of Dogfish Ledges, about three hundred yards from it, with the beacon on Fiddler's Ledge bearing **NW.** ⅜ **N.**, distant a little over three-eighths of a mile, steer **W.** by **N.** ⅝ **N.**, passing to the southward of the spindle on Drunkard's Ledge and carrying not less than five and three-quarter fathoms water. On this course, when Owl's Head Light-house bears **W.** ⅝ **N.** and Indian Island Light-house **NW.** by **N.** ⅜ **N.**, steer **NW.** ½ **N.**, which will lead safely up to the entrance to the harbor, passing about three-eighths of a mile to the *southward* of Porterfield's Ledge. Continue the course until Indian Island Light-house bears **NE.** by **N.** ⅞ **N.**, when steer **N.** ½ **E.** up the harbor, and follow the directions given above. *Or*, with Owl's Head Light-house bearing **W.** ⅝ **N.** and Indian Island Light-house **NW.** by **N.** ⅜ **N.**, as before, steer **NW.** by **N.** ⅛ **N.**, passing about a quarter of a mile to the *northward* of Porterfield's Ledge; and when Indian Island Light-house bears **E.** by **N.** ½ **N.**, distant six hundred and fifty yards, steer **N.** ½ **E.**, as before.

Vessels coming from the vicinity of Owl's Head or Rockland Entrance may bring Porterfield's Ledge Beacon in range with Indian Island Light-house on a bearing of **N.** by **E.** ½ **E.** and steer **N.** ½ **E.**, which will lead up to the head of the harbor, as before.

DANGERS

IN APPROACHING AND ENTERING ROCKPORT HARBOR.

II. ***Coming from the Northward, through West Penobscot Bay.***—Approaching from the northward, the first danger met with is called The Graves, and lies nearly a mile from shore. It is a small rocky islet, with bold shores, and is exactly in the way of vessels coming along shore from the northward. It should be marked by a beacon, and such will ***The Graves.***

be recommended to be placed upon it. It bears from Negro Island Light-house (at the entrance to Camden) S. by E., distant one mile and a quarter, and from Indian Island Light-house NE. by E. ½ E., distant one mile and a half.

Vessels passing inshore of The Graves must not approach the shore, when about a mile to the southward of Negro Island Light-house, nearer than three-eighths of a mile, to avoid Goose Rock, a small, bare, rocky islet, lying about a quarter of a mile from shore, with dangerous shoals to the westward and southward of it,—the latter extending all the way to the northern extremity of Deadman's Point. A safe rule, if standing to the westward on a wind along this shore, is not to go farther than to bring Negro Island Light-house to bear N. by E. ½ E. until to the southward of Deadman's Point.

Goose Rock.

The next danger met with lies on the southern side of the approach from the northward, and is known as Porterfield's Ledge, before described on page 278. It is the southernmost of the shoals to the southward of Beauchamp Point, is dry at low water and is marked by a stone beacon. From the spindle on Lowell's Rock it bears S. by W. ½ W., distant one hundred yards, and from Beauchamp Point it is distant seven-eighths of a mile in the same direction. The beacon, which is square and surmounted by a mast with cask on top, is twenty feet high, and is a guide to vessels coming either from the northward or southward. The channel from the southward passes to the westward of this ledge, and has from eight to twelve fathoms in it and bold shores. Vessels from the northward always pass to the eastward of Porterfield's Ledge, between it and Lowell's Rock.

Porterfield's Ledge.

The red spindle on the northern side of the passage is off Lowell's Rock, before described, (see page 278,) which is bare at low water, and lies about two hundred and fifty yards to the southward of Indian Island, marking the northern limits of the channel. The spindle, which is of iron, is surmounted by a cage eleven feet long, with a ball on top, and is to be left to the eastward by vessels coming from the southward and to the northward by those using the northern channel.

Lowell's Rock.

When past Lowell's Rock the course leads to the northward into the harbor, and the dangers met with are the same as those described on pages 278–279.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING ROCKPORT HARBOR.

III. ***Coming from the Northward, through West Penobscot Bay.***—On the course SW. by S. through the bay, bring Negro Island Light-house (at the entrance to Camden) to bear NW. by W. ¾ W., two miles distant, and steer SW. by W. ¾ W., which will lead you safely up to abreast of the red spindle on Lowell's Rock, passing six hundred yards to the *eastward* of The Graves. Round the spindle at a distance of about two hundred yards, and steer N. ¼ W. for the head of the harbor, anchoring at discretion. *Or*, bring Negro Island Light-house to bear NW. by W. ¾ W., distant nearly seven-eighths of a mile, and steer SW., which will lead you up to abreast of Lowell's Rock spindle, as before, passing a quarter of a mile to the *westward* of The Graves. Round the spindle and steer up into the harbor.

LIGHT-HOUSE.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Indian Island Light-house	44 9 54	69 3 22	4 36 13.5	Fixed red.	47	12

TIDES.

Corrected Establishment	11h 8m
Mean Rise and Fall of tides	9.8 ft.
Mean Rise and Fall of Spring tides	10.5 ft.
Mean Rise and Fall of Neap tides	9.2 ft.
Mean duration of Rise	6h 14m
Mean duration of Fall	6h 11m

CAMDEN HARBOR.

The entrance to this harbor is about six and one-third miles to the northward of Owl's Head and a little over two miles above Rockport Entrance, and is contained between Northeast Point on the north and Ojier's Point on the south. The harbor is formed by a large cove with two arms,—one running N NE. and called Sherman's Cove or Outer Harbor; the other running N NW. and called Inner Harbor. Into the latter flows the Megunticook River.

Northeast Point is long, rather low, and bare of trees, lies **N.** and **S.**, and has off its southern point a large iron spindle surmounted by a copper cylinder and a gilt ball and painted red; and another, painted black and surmounted by a copper cylinder, a little to the eastward of the former. The northern part of this point is wooded; and it is also sometimes called **Morse's Point.** **Northeast Point.**

Ojier's Point is about sixty feet high, with steep slopes and low, precipitous faces to a height of ten feet above the water. Its southern slopes are entirely cleared, while from its summit to the northward it is thickly wooded. About three-eighths of a mile to the northward lies **Metcalf's Point,** low and level, cleared and cultivated near the shore, and backed by hills with wooded slopes and grassy summits thickly dotted with houses. **Ojier's Point.**

Off Metcalf's Point lies Negro Island, a small island of moderate height, with a light tower upon it. It lies two hundred and fifty yards **E.** by **S.** from the point, is about a quarter of a mile long, with somewhat steep faces, and has a few scattered trees upon it. There is a passage between this island and Metcalf's Point, but it is nearly dry at low water and is seldom used except by small boats. On the southern end of the island, which is thirty feet high, is built the light-house called Negro Island Light-house, which is the guide to the harbor. **Negro Island and Light-house.**

It is a white tower sheathed with wood, and shows a fixed white light, of the fourth order of Fresnel, from a height of fifty-two feet above the sea, visible twelve miles. Its geographical position is:

Latitude	44° 12′ 4″ N.
Longitude	69° 2′ 56″ W.

A low, white house, standing near the tower, is the keeper's dwelling.

On the western side of Northeast Point, between it and Eaton's Point, makes in Sherman's Cove, sometimes called the **Outer Harbor.** It is about half a mile long in a **N NE.** direction, and at its entrance has a width of nearly eight hundred yards; but above this the average width of the cove is only a little over a quarter of a mile. **Eaton's Point,** which forms the western point of entrance to the cove as well as the eastern point of entrance to the Inner Harbor, is a bare sandy point rising to a height of about forty feet and has no trees; but a number of houses and wharves are seen on its southern and western sides. It is not bold-to, and cannot be approached nearer than an eighth of a mile with three fathoms water. **Sherman's Cove.**

The Inner Harbor is about half a mile long and a third of a mile wide at its entrance, after which its width contracts gradually until at the town it is but two hundred and fifty yards wide. Its entrance is between Eaton's Point on the north, and Metcalf's Point, which has been already described, on the south. Back of the harbor the lands are cleared and cultivated well up the slopes of the hills. Off the southern end of Eaton's Point a long pier makes out, which is used by the Boston and Portland steamers as their landing-place. **Inner Harbor.**

The village of **Camden** occupies the western side of the Inner Harbor, at the base of the **Camden Hills,** which rise to a height of from twelve to fifteen hundred feet. Behind the village the sides of the hills are cultivated to a height of two hundred feet, but above this they are mostly wooded with a thick growth of short pine, low spruce, and fir, birch, hemlock and oak trees. The village has about four thousand six hundred inhabitants. The trade is mostly in lime, although there are some lumber and fishing interests.

The entrance to Camden Harbor from the southward and eastward is to the eastward of Negro Island Light-house, between it and the dangerous **Outer Ledges** off Northeast Point; and the course in looks nearly midway between the summit of **Mount Megunticook** and that of **Mount Beattie,**—the former being thirteen hundred and the latter eight hundred feet high, and both forming the most prominent landmarks for entering the harbor.

DANGERS

IN APPROACHING AND ENTERING CAMDEN HARBOR.

I. ***From the Southward, through West Penobscot Bay.***—The approach from the southward leads between Northeast Point and Negro Island, and in approaching it the first danger met with is **The Graves,** a rocky islet, lying **S.** by **E.** from Negro Island Light-house, a mile and a quarter distant. It is exactly in the way of vessels coming along shore from the southward, and should be marked by a beacon.

When past The Graves and up with Negro Island a red spar-buoy will be seen well to the southward of Northeast Point. This is on the southern end of Outer Ledges, sometimes called *Northeast Ledges.* These are a group of dangerous rocks lying **S.** from Northeast Point, extending in a **N NE.** and **S SW.** direction between five and six hundred yards. Many of them are bare and all are dangerous. The buoy is marked No. 2, placed in four fathoms about twenty yards to the southwestward of the ledge; and is to be left to the eastward in coming in by this channel. An iron spindle, painted black, with copper cylinder on top, is placed near the northern end of these ledges as a guide to vessels from the northward. ***Outer Ledges.***

When up with the red buoy on the southern end of Outer Ledges look out, to the westward of their northern end, for Inner Ledges, which are separated from the outer shoals by a passage one hundred yards wide with over three fathoms, and are bare in places at low water. Near the southern end of these ledges will be seen an iron spindle, painted red, with cylinder ***Inner Ledges.***

and gilt ball on top. This is a guide to vessels coming from the northward as well as those bound in from the southward. To avoid the ledges be careful not to approach Northeast Point from the southward or southwestward nearer than four hundred yards, and watch carefully the bearings of the spindle.

On the western side of the channel, when up with the red buoy on Outer Ledges, look out for White's Ledge, sometimes called *Harbor Ledge*, which extends off from the northwestern end of Negro Island N NW. about two hundred and twenty yards. It has four feet at mean low water and is nearly awash at low spring tides, but is only dangerous to vessels bound into the Inner Harbor. A black spar-buoy (No. 3) is placed on its eastern side in eight feet water. Vessels may avoid the ledge by keeping about midway between Northeast Point and the northern end of Negro Island until the long wharf just above Metcalf's Point bears W. by N. ¼ N., when the channel is clear to the steamboat wharf on Eaton's Point, with nothing less than ten feet at mean low water.

White's Ledge.

Only two feet at mean low water can be taken into the Inner Harbor; and at low spring tides it is nearly dry from shore to shore. Vessels lie aground either on the flats or alongside the wharves.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING CAMDEN HARBOR.

I. ***Coming from the Southward, through West Penobscot Bay.***—On the N. ¾ E. course up the bay, when Negro Island Light-house bears N. by W. ¼ W. and Indian Island Light-house NW. ⅝ N., steer N. by W. ⅛ W., which will lead clear of all dangers, directly into Sherman's Cove, with not less than six and a half fathoms until past Inner Ledges, after which the soundings gradually decrease; when anchor, according to draught, in from two to four and a half fathoms, soft bottom. The above course passes nearly a quarter of a mile to the eastward of The Graves; one hundred and fifty yards to the southward and westward of the red spar-buoy on the southwestern end of Outer Ledges, and the same distance to the westward of Inner Ledges.

Or, you may bring Negro Island Light-house to bear NW. by N. ⅛ N. and the summit of Mark Island E. ½ N., and steer for the former until within three-eighths of a mile of it, when N. by W. ⅛ W. will lead safely into Sherman's Cove, as before. *If bound into the Inner Harbor;* when, on the course N. by W. ⅛ W. into Sherman's Cove, the red spindle on Inner Ledges is abeam, or when Negro Island Light-house bears S. by W. ½ W., steer NW. ½ W. for the steamboat wharf on Eaton's Point until within one hundred and fifty yards of it, when turn to the westward, rounding the point at about the same distance, and keep midway between the two lines of wharves.

II. ***To come from Fox Islands Thoroughfare and enter Camden Harbor.***—When abreast of the red spindle on the northern end of Dogfish Ledges steer W. by N. ¾ N., carrying not less than five and three-quarter fathoms water, until past the black spindle on Drunkard's Ledge and Owl's Head Light-house bears W. ⅝ N.; when N. by W. ⅛ W. leads straight into Sherman's Cove, which is a little over seven miles distant. *If bound into the Inner Harbor*, follow the directions given above. The above course for Camden Entrance passes nearly a quarter of a mile to the eastward of The Graves.

III. ***Bound from Rockport to Camden.***—Round the beacon on Lowell's Rock (which is the red spindle at the eastern point of entrance to Rockport Harbor) at a distance of two hundred yards, with nine fathoms water, and steer NE. ¼ E. until abreast of Deadman's Point,—the first point to the northward of Beauchamp. Now steer N NE. until Negro Island Light-house bears W NW. or is abeam, when, if bound into Sherman's Cove, steer N. by W. ⅛ W. to the anchorage. *Or, if bound into the Inner Harbor*, steer N. by W. ⅛ W. until abreast of the red spindle on Inner Ledges, or until Negro Island Light-house bears S. by W. ½ W.; when steer NW. ½ N. for the steamboat wharf on Eaton's Point, and follow the direction previously given.

DANGERS

IN APPROACHING AND ENTERING CAMDEN HARBOR.

II. ***Coming from the Northward, through West Penobscot Bay.***—This passage leads between Northeast Point and Outer and Inner Ledges and has three and a quarter fathoms at mean low water, but is quite narrow. It is, however, very much used by coasters and fishermen bound to Camden from the northward. The only obstructions are Dillingham's Ledge, the Outer and Inner Ledges, and Northeast Point Ledge or Morse's Point Ledge, which latter makes off from the point of that name on the northern side of the entrance. Dillingham's Ledge lies a mile and a quarter NE. ¼ E. from Northeast Point and about half a mile from

Dillingham's Ledge.

the western shore of the bay. It has nine feet at low water, is not marked in any way, and is very dangerous to vessels bound up the bay as well as those bound to Camden from the northward. The only reliable rule for avoiding it, by vessels approaching Camden from the upper part of the bay, is, if beating, not to stand to the westward of Negro Island Light-house bearing **SW.** The sailing-lines lead about midway between this ledge and *Moxy's Reef*, which has from three and a half to four and a half fathoms, and is not dangerous except to vessels of the largest size. ***Dangers--Camden Harbor.***

On approaching Camden Harbor by the northern channel two spindles—one red and one black—will be seen to the southward of Northeast Point; and a little to the northward of the black spindle, a black spar-buoy. The two latter are on Outer Ledges, and are to be left to the southward by vessels using this passage. These ledges are for the most part bare at low tide, and are between five and six hundred yards long in a **N NE.** and **S SW.** direction. The buoy is marked No. 1, and is placed in twenty-four feet water off the northern point of the ledge. The spindle is surmounted by a copper cylinder, and is placed on the northern point of the ledge, just to the southward of the buoy. ***Outer Ledges.***

The red spindle is on Inner Ledges, which, as before mentioned, lie **W NW.** from the northern end of Outer Ledges, from which they are separated by a passage one hundred yards wide. The spindle stands near the southern end of the rocks, and is surmounted by a copper cylinder and gilt ball,—the whole being painted red. Vessels using this passage pass between the spindle and *Northeast Point Ledge* or *Morse's Point Ledge*, which makes off from that point for a little over one hundred yards and is dry at low water. This part of the channel is very narrow, and vessels should give the red spindle a berth of about one hundred yards to the southward to keep in the best water. ***Inner Ledges.***

When past Inner Ledges and Northeast Point Ledge the course leads to the westward towards the long wharf on the western shore of the harbor, just above Metcalf's Point; and a black spar-buoy (No. 3) will be seen off the northwestern end of Negro Island. This is on White's Ledge or *Harbor Ledge*, (with four feet at mean low water and awash at low spring tides,) which extends off in a **N NW.** direction from the northwestern end of Negro Island about two hundred and twenty yards. The buoy is placed on its eastern side in eighteen feet water. Vessels may easily avoid this ledge by not going to the southward of the long wharf (which has a warehouse upon it) bearing **W. ¾ N.** ***White's Ledge.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING CAMDEN HARBOR.

IV. ***Coming from the Northward, through West Penobscot Bay.***—On the **SW.** by **S.** course through the bay bring Negro Island Light-house to bear **SW. ½ W.**,—the light being in range with the dry rocks of Outer Ledges. Steer for the light, carrying not less than five fathoms, until the extremity of Northeast Point bears **NW.** by **W. ¾ W.** four hundred yards off; when there will be five fathoms, and you must steer **W. ¾ N.**, keeping the northern side of the entrance best aboard. This course leads straight into the Inner Harbor, with not less than nineteen feet at low water until past the mouth of Sherman's Cove, after which it gradually shoals to the head of the harbor. *Wishing to anchor in Sherman's Cove,* no directions are necessary other than to keep about two hundred yards from Northeast Point; after passing which, haul to the northwestward and anchor at discretion.

To escape being set by the tide on to Inner Ledges, watch the bearing of the long wharf above Metcalf's Point and keep it directly ahead.

Those who are well acquainted with the dangers sometimes pass between Outer and Inner Ledges. This channel is wider than the northern channel, but is not safe for strangers. The courses in are as follows: When to the southward of Dillingham's Ledge, bring Negro Island Light-house to bear **SW. ⅜ S.** and steer that course, carrying not less than three and a quarter fathoms, until the red spindle on Inner Ledges bears **N.** by **E.** and you are within three hundred and fifty yards of Negro Island Light-house. Now steer **NW. ¾ W.** into the Inner Harbor, or **N.** by **W. ⅛ W.** into Sherman's Cove.

LIGHT-HOUSE.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Negro Island Light-house.....	44 12 4	69 2 56	4 36 11.7	Fixed.	52	12

TIDES.

Corrected Establishment	11h 7m
Mean Rise and Fall of tides	9.8 ft.
Mean Rise and Fall of Spring tides	10.5 ft.
Mean Rise and Fall of Neap tides	9.2 ft.
Mean duration of Rise	6h 14m
Mean duration of Fall	6h 11m

GILKEY'S HARBOR.

This is the most important of the harbors on the western side of Long Island, and is contained between South Islesboro' on the east and Seven Hundred Acre, Warren's and Spruce islands on the west. It is easy of access, and is one of the best anchorages in the whole bay. There are no dangers in the approach to it by the northern entrance, and but few in the southern approach. The most commonly used channel into the harbor passes to the northward of the islands mentioned above, between them and Grindel's Point, the southwestern extremity of Long Island. The southern entrance to the harbor, which passes between Seven Hundred Acre Island and Job's Island, is obstructed by a few outlying islands and ledges, and should not be used at night.

Seven Hundred Acre Island. Seven Hundred Acre Island lies about **N NE.** and **S SW.**, is a mile and five-eighths long, of moderate height, with a very gentle slope, and is for the most part under cultivation, though there is a large, thick patch of woods near the centre. Its western end is rocky and barren, with scattered clumps of trees upon it, conspicuous among which is a group of very tall birch trees. The northern end of this island is nearly opposite to, but a little below, the settlement of The Beach, on the western shore.

Warren's Island. Warren's Island lies to the eastward of the northern end of Seven Hundred Acre Island, at a distance of about two hundred and fifty yards. It extends **N.** and **S.**, is about three-quarters of a mile long, and is for the most part cleared and under cultivation. Its northern end is, however, thickly wooded with spruce and fir, and extends into a low sandy point with a few small fir trees upon it. This is the southern point of the main entrance to Gilkey's Harbor, and is about six hundred yards to the southwestward of Grindel's Point.

Spruce Island. Next to the eastward of Warren's Island, separated from it by a narrow strait, lies Spruce Island. It is of irregular shape, lies **N.** and **S.**, and is about half a mile long. At its southern end is a somewhat steep hillock, thinly covered with the usual growth of spruce and fir; but the rest of the island is diversified with woods and cleared fields.

Grindel's Point and Light-house. Grindel's Point, the northern point of entrance to Gilkey's Harbor, is low, rocky, and thickly covered with low, bushy trees. On its southern extremity is built Grindel's Point Light-house, which rises from the roof of the keeper's dwelling, and shows a fixed white light, of the fifth order of Fresnel, from a height of thirty-nine feet above the sea, visible eleven miles. Its geographical position is

Latitude	44° 16′ 53″ N.
Longitude	68° 56′ 35″ W.

Robinson's Rock. The southern approach to Gilkey's Harbor is guarded on the east by the line of islets and islands extending off to the southwestward from Long Island, and which have been before described; but it may not be out of place to repeat the descriptions here for the convenience of those using this passage. The southernmost of these is known as Robinson's Rock, lies a little over four miles and a half to the southwestward of Long Island, and is surrounded by bare and sunken ledges. With the shoal water around it, it occupies a space of about half a mile **N NE.** and **S SW.**, but may be approached from the westward to within an eighth of a mile.

Mark Island. About two-thirds of a mile to the northward of Robinson's Rock will be seen a small rocky island with steep faces and wooded with fir, called Mark Island. It lies **N NE.** and **S SW.**, is between five and six hundred yards long, and very bold-to on its western shore. Vessels may stand boldly to within one hundred yards of the island with four fathoms water. An excellent passage, with from twelve to fourteen fathoms water, leading from West Penobscot Bay into the Middle Passage, exists between this island and Robinson's Rock. It is about seven hundred and fifty yards wide between the lines of three fathoms, is perfectly unobstructed, and may be safely used by strangers. Well to the eastward of Mark Island will be seen **Saddle Island**, described on page 254, which is not, however, of importance to vessels entering Gilkey's Harbor.

Goose Rock. To the northward of Mark Island, and between it and Lasell's Island, lie several bare and sunken ledges, dangerous to vessels standing to the eastward. The most remarkable of these is the westernmost, which lies about eight hundred yards **N NE.** from Mark Island, and is called Goose Rock. It is a rocky islet, bare of all vegetation, and surrounded by shoal water. It may be approached, however, from the westward within a hundred and seventy-five yards with seven fathoms water. From Negro Island Light-house (at the entrance to Camden) it bears **SE. by E.**, a little over three miles distant. To the southeastward, nearly a quarter of a mile, lies a ledge bare at low water; to the northeastward, a little over a quarter of a mile, lies another; and between and among these ledges wind deep channels with from ten to seventeen fathoms water. Between Goose Rock and Mark Island there is a channel eight hundred yards wide with from seven to thirteen fathoms, obstructed only by a ledge, bare at low water, which lies about a hundred and fifty yards to the northward of Mark Island. This channel may also be used by strangers, who need only keep in the middle to pass safely through with not less than nine fathoms.

Lasell's Island, which lies about a mile and an eighth to the northeastward of Mark Island, is about twelve hundred yards long **N.** by **E.** and **S.** by **W.**, diversified with woods and cleared lands of moderate height, and bold-to. Its southern end is the highest, and is rocky, steep and wooded; while the northern end is composed of nearly level land, cleared and cultivated, has several houses upon it, and shows a steep, almost perpendicular, face to the westward. There is no passage between this island and Long Island, as a mass of shoals extends the whole distance, surrounding the various islands between them. **Lasell's Island.**

About an eighth of a mile to the northeastward of Lasell's Island lies **Lime Island**, a small, low, sandy island, about two hundred yards long, and pretty thickly wooded; and about two-thirds of a mile to the northeastward of this lies Job's Island, which marks the eastern point of the southern entrance to Gilkey's Harbor. It is a little over a mile and a half long **NE.** and **SW.**, and when seen from the southward and westward appears rather low, wooded, and faced by a white sand beach. The eastern side of the island is, however, steep and rocky; and between it and Pendleton's Point (the southeastern extremity of Long Island) the distance is about three-eighths of a mile, but there is no safe passage through between them. Between Job's and Lime islands there extends a line of ledges for the most part bare at low water. The western shore of the island is shoal and should not be approached within less than three hundred and fifty yards. The northern end of Job's Island is sometimes called **Middle Island.** **Job's Island.**

On the western side of the southern entrance to Gilkey's Harbor lie two very small, low islands, with a few trees upon them, known as Ensign Islands. From the southern point of Job's Island they bear about **N NW.**, distant a little over three-quarters of a mile, and from the southern end of Seven Hundred Acre Island **SW.** by **S.** ¼ **S.**, distant about eleven hundred yards. The islands are connected with this latter point by a mass of shoals and ledges for the most part bare at low water. **Ensign Islands.**

Job's Island is connected at its northern end by dangerous flats with Minot's Island, small and low, with a few trees upon it, and a little over a third of a mile long in a **NE.** and **SW.** direction. It lies about a third of a mile from the western shore of Long Island, but there is no passage between them,—the whole space being occupied by flats and ledges. About three hundred yards off its southwestern end lies a bad ledge, bare at low water, called **Minot's Ledge**, which contracts the width of the channel to a little less than six hundred yards. This is the narrowest part of the channel,—being only about three hundred and fifty yards wide between the lines of three fathoms. Minot's Island is sometimes called **Spruce Island.** **Minot's Island.**

The shores of the southern part of Gilkey's Harbor are very irregular in outline and much cut up by small coves and other indentations. The eastern shore, which is formed by the western side of South Islesboro', shows alternate cultivated and wooded lands, varying in height from thirty to one hundred and forty feet, with houses occasionally dotting the slopes. On the eastern shore, about five-eighths of a mile to the northeastward of Minot's Island, makes in Ames' Cove, separated from Dark Harbor, on the eastern shore of Long Island, by a narrow strip of land only two hundred yards wide. The cove is of very irregular shape, shallow, and of no importance. Its southern point of entrance is formed by a projecting spur of land about thirty feet high and wooded. **Ames' Cove.**

On the western shore, just to the northward of the eastern extremity of Seven Hundred Acre Island, makes in a semicircular cove, about three-eighths of a mile in diameter, called Cradle Cove. Anchorage in from twelve to fourteen feet may be found in this cove, and the shoaling is gradual. A narrow passage, almost entirely bare at low water, leads from this cove, between the northern end of Seven Hundred Acre Island and Warren's Island, into West Penobscot Bay. **Cradle Cove.**

A little over half a mile to the northward of the entrance to Ames' Cove, and on the eastern side of the harbor, will be seen a stone monument close in with the shore. It is known as Thrumbcap Monument, and is built upon a small, low, rocky islet lying about two hundred yards from shore, with no safe passage between. It should not be approached from any direction nearer than three hundred yards to avoid the dangerous shoals which surround it. The passage between this monument and Spruce Island is about three-eighths of a mile wide, with from three to eight fathoms water, and above this begins the northern part of the harbor proper. **Thrumbcap Monument.**

Vessels entering Gilkey's Harbor by the northern passage have an unobstructed channel, and will meet with no dangers until well inside the harbor,—it being only necessary to keep in the middle between Grindel's Point and Warren's Island. Inside the harbor, however, there are several bad ledges, which render the passage from the northern to the southern part of the harbor dangerous to strangers. Of these ledges the first met with after passing Grindel's Point is called Half-Tide Ledge, and lies pretty well over towards the eastern shore,—being a little over half a mile **E.** from the northern end of Spruce Island and about two-thirds of a mile **SE.** from Grindel's Point Light-house. As its name implies, it is out at half-tide, and it is not in the way of vessels using the northern part of the harbor as an anchorage. The best anchorage is to the southward or westward of this ledge, or off the mouth of what is called **Broad Cove**, which makes in on the eastern side of Grindel's Point in a **NE.** direction. The cove is shallow, however, and must not be entered except by vessels of light draught. **Half-Tide Ledge** is sometimes called **Lobster Rock.** **Half-Tide Ledge.**

Vessels intending to pass into the southern part of the harbor will find the passage very much contracted by two ledges, one of which lies off the eastern shore of Spruce Island and is called **Sunken Ledge**, and the other extends from **Sherman's Point**, (on the eastern side of the harbor, directly opposite to Spruce Island.) This latter, called Long Ledge, is bare at low water to a distance of a quarter of a mile from shore, and bears from the northern point of Spruce Island **E.** by **S.**, a little over half a mile distant, and from Grindel's Point Light-house **SE.** ¼ **E.**, three quarters of a mile distant. None of these ledges are buoyed. **Long Ledge.**

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING GILKEY'S HARBOR.

I. ***From the Southward, by the passage between Seven Hundred Acre Island and Job's Island.***—This passage is much the best entrance to Gilkey's Harbor,—being over half a mile wide between the lines of three-fathoms at its southern end, and three hundred and fifty yards wide in its narrowest part. Not less than ten fathoms can be taken into it for a distance of a mile and a quarter above its mouth through a wide and unobstructed channel, and seven fathoms may be carried over two miles. If it were lighted, so as to be easy of access by night, it would be universally used by vessels coming from the southward; but without such a guide it is difficult of approach. *To enter by this passage;* when, on the **N.** $\frac{3}{4}$ **E.** course up the bay, Negro Island Light-house (at the entrance to Camden Harbor) bears **NW.** by **N.** $\frac{1}{8}$ **N.**, distant two miles and seven-eighths, and the highest part of Mark Island **E.** $\frac{1}{2}$ **N.**, distant nearly three-quarters of a mile, with about thirty fathoms water, steer **NE.** $\frac{1}{4}$ **N.**, which will lead you safely into the entrance and as far up as Minot's Island, carrying not less than nine and a quarter fathoms. On this course, when the highest part of Minot's Island bears **E SE.** (in range with the dry part of Minot's Ledge) and the southern extremity of Seven Hundred Acre Island **W.** $\frac{3}{8}$ **N.**, steer **NE.** $\frac{3}{4}$ **E.**, and anchor at discretion anywhere on this course. *Or,* wishing to proceed farther up the harbor, steer **NE.** $\frac{3}{4}$ **E.** until Thrumbcap Monument bears **NE.** $\frac{3}{4}$ **N.** and Grindel's Point Light-house (seen just clear of the western side of Spruce Island) **N. Westerly,** and you are abreast of the eastern extremity of Seven Hundred Acre Island; when **N NE.** will lead safely up the harbor. On this course, when abreast of Spruce Island care must be taken not to go too far to the northward in order to avoid Lobster Rock and Long Ledge. Good anchorage may be found on either of the above courses.

II. ***To enter Gilkey's Harbor by the passage between Grindel's Point and Warren's and Spruce islands.***—This entrance is the easiest of access by night, owing to Grindel's Point Light-house; but it is much the narrower of the two and the shores are not so bold. It is, however, the best channel for vessels coming from the northward. *Vessels coming from the southward* must, when on the **NE.** by **N.** course up the bay, bring Grindel's Point Light-house to bear **E.** $\frac{1}{8}$ **N.**, distant nearly a mile, and steer for it until within six hundred yards, with the northern end of Warren's Island bearing **S.** $\frac{7}{8}$ **E.** Now steer **SE.** by **E.** $\frac{5}{8}$ **E.**, and anchor to the westward of Lobster Rock. On this course there is not less than four and a quarter fathoms water. *Or,* you may continue the **SE.** by **E.** $\frac{5}{8}$ **E.** course until Thrumbcap Monument bears **S.**, when steer for it, (keeping about three hundred yards from the eastern shore of Spruce Island,) and anchor at discretion. *Coming from the northern part of the bay* and intending to enter the harbor, when about midway between Great Spruce Head and Seal Island,—the former bearing **W.** $\frac{3}{8}$ **N.** and the highest part of the latter **E.** $\frac{3}{8}$ **S.**,—steer **S.** by **W.** $\frac{7}{8}$ **W.** for the northern end of Warren's Island, with Grindel's Point Light-house a little to the eastward of the course. On this course, when within two hundred and fifty yards of the island with the light-house bearing **E.** by **N.** $\frac{1}{8}$ **N.**, steer **SE.** by **E.** $\frac{5}{8}$ **E.**, and follow the directions previously given.

LIGHT-HOUSE.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Grindel's Point Light-house	**44 16 53**	**68 56 35**	**4 35 46.3**	**Fixed.**	**39**	**11**

DUCK TRAP HARBOR.

This harbor, which is sometimes called Lincolnville Harbor, is formed by a large cove on the western shore of the bay, exactly opposite the northern entrance to Gilkey's Harbor and about five miles above Camden. It is contained between Spruce Head on the northeast and Frohock's Point on the southwest, and between these two points it is about a mile and two-thirds wide. The settlement of Lincolnville is built at the base of Duck Trap Mountain, a high, precipitous hill with bare summit, and having its slopes partly wooded but for the most part covered with scrub and bushes. It is next to the northeastward of Frohock's Mountain, with comparatively low, undulating land between them, diversified with woods and cultivated fields.

Into the northwestern corner of the harbor empties **Duck Trap River**, a small stream, which rises in **Pitcher's Pond** and skirts the western base of Duck Trap Mountain on its southeasterly course to the bay. The settlement stretches along the whole of the western shore and part of the northern shore.

Spruce Head, the northeastern point of entrance to the cove, is low, grassy, and dotted with a scattered growth of fir and spruce; while **Frohock's Point**, the southwestern point of entrance, shows cultivated fields and grassy lands dotted with houses, with several wharves extending out from it. Just above this point is that part of the settlement which is known as **The Beach**, and is of some importance as a watering-place during the summer season.

Anchorage in from two to seven fathoms is found in this cove, with good shelter in northerly and westerly winds, but it is completely open to the southward.

DANGERS

IN APPROACHING AND ENTERING DUCK TRAP HARBOR.

The only danger in the approach to this harbor lies nearly in the midde of the entrance, but somewhat nearer to Spruce Head. It is called *Haddock Ledge*, has four feet at mean low water, and is marked by an iron nun-buoy of the second class, painted red, marked No. 2, and placed on the southwestern side of the ledge in seven fathoms. It should, however, be painted red and black in horizontal stripes, as there is equally good water on all sides of it; and when past it there are no other dangers in the harbor. It is only necessary to keep about a quarter of a mile from either shore; and Spruce Head may even be approached with safety to within an eighth of a mile by vessels of the largest draught.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING DUCK TRAP, HARBOR.

I. ***Coming from the Southward.***—When off Camden Harbor, on the **N.** $\frac{3}{4}$ **E.** course up the bay, bring Negro Island Light-house to bear **NW.** by **W.** $\frac{3}{4}$ **W.**, distant about two miles, and the western extremity of Seven Hundred Acre Island **NE.** $\frac{1}{2}$ **N.**, distant four miles; when you will have about thirty-two fathoms water, and must steer **N.** by **E.** $\frac{3}{4}$ **E.**, which will lead safely into the harbor, passing a quarter of a mile to the westward of Haddock Ledge and carrying not less than four fathoms. Anchor at discretion when to the northward of the buoy on Haddock Ledge.

II. ***Coming from the Northward.***—On the **SW.** by **S.** course through the bay, when about midway between Great Spruce Head and Seal Island,—the former bearing **W.** $\frac{3}{8}$ **N.** and the highest part of the latter **E.** $\frac{3}{8}$ **S.**,—steer **SW.** $\frac{3}{4}$ **W.**, and continue the course until abreast of Spruce Head, which round at a distance of from an eighth to a quarter of a mile, and steer to the westward into the harbor (passing well to the northward of Haddock Ledge) and anchor at discretion.

SEAL HARBOR.

Two miles above Gilkey's Harbor, on the western shore of Long Island, there is formed a large cove of irregular shape, which makes in a **NE.** by **E.** direction for nearly a mile, almost cutting the island in two. This is Seal Harbor, which affords excellent anchorage in from five to ten fathoms, and is entirely unobstructed. A small, low, flat, grassy island, called **Flat Island**, lies almost exactly in the middle of the entrance, with a channel about half a mile wide (between the lines of three fathoms) on its southern side with from nine to ten fathoms, and another about four hundred yards wide on its northern side with from four to eight fathoms water. This latter passage leads between Flat Island and a high, bare, rocky islet to the northward, called **Seal Island**. The best channel is, however, that on the southern side of the former.

The shores on the northern side of Seal Harbor are for the most part wooded, while those on the southern side are cleared; and there are no obstructions either in the harbor or in the approaches to it. It is only necessary to give the shores on both sides a berth; and the southeastern shore may be approached within two hundred yards with not less than three fathoms at low water. The northern shore is not so steep-to, and should in no case be approached within less than three hundred and fifty yards.

Just above the entrance to Seal Harbor, and on the eastern shore nearly opposite to Flat Island, makes in **Crow Cove**, of very irregular shape, but entirely unobstructed, and affording complete shelter in from fourteen feet to four fathoms. It penetrates the shore of Long Island for about half a mile in an **E.** by **S.** direction, is nearly three hundred yards wide in its narrowest part, (just inside the entrance,) and nearly joins **Bounty Cove** on the eastern shore,—being separated from it by a strip of low land only one hundred yards in width.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING SEAL HARBOR.

I. ***From the Southward.***—On the **NE.** by **N.** course through the bay, bring Grindel's Point Light-house to bear **SE.** by **E.** $\frac{1}{8}$ **E.**, distant three-quarters of a mile, and Spruce Head **NW.** by **N.** $\frac{1}{4}$ **N.**,

Sailing Directions--Seal Harbor. distant one mile, with about twenty fathoms water, and steer **NE.** by **E.**, which course will lead you safely into the harbor, carrying not less than six fathoms nearly to the head of the cove, and passing three-eighths of a mile to the southward of Flat Island. Anchor anywhere on the course into the harbor when to the northward of Crow Cove,—taking care only to keep off the shores.

II. ***From the Northward.***—The passage from the northward leads, as before mentioned, between Flat and Seal islands, and is about three hundred and fifty yards wide between the lines of three fathoms. The two islets are half a mile apart, but the width of the available channel is diminished by *a long ledge*, which makes in a **N NE.** direction for a quarter of a mile from the northern end of Flat Island. This ledge is in places bare at low water, and four feet is found upon it about three hundred and fifty yards from the islet. It is therefore necessary in coming in to give Flat Island a berth of about one-third of a mile to the southward, while Seal Island may be approached within one hundred and fifty yards with not less than three fathoms. Strangers should not attempt to enter Seal Harbor by this channel, as the ledge on the southern side of the entrance is not buoyed. The course in is **SE.** by **E.** between the two islets, keeping about six hundred yards from the southernmost, (in which case you will carry in not less than five and a half fathoms,) and when abreast of the northern point of the entrance to the harbor, having it bearing **NE.** by **N.**, haul to the northward and steer boldly in, carrying not less than eight fathoms if you keep nearly in the middle.

There is also another passage leading into Seal Harbor from the Northward, which skirts the western shore of Long Island, leaving Seal Island and **Hog Island** (which is about forty feet high and thinly wooded, and is connected with the former by a line of dangerous bare and sunken rocks) to the westward. This passage has six fathoms water, but is not fit for strangers, as there is a long line of ledges, bare and sunken rocks, extending, as before mentioned, from Seal Island for over a quarter of a mile to Hog Island, and to the northward of the latter for five-eighths of a mile; and there are also some detached rocks in the passage which diminish its width to about fifty yards. None of these are buoyed, and the passage is never used except by small vessels with experienced local pilots on board.

Above Seal Harbor there are no anchorages of importance on the western shore of Long Island.

BELFAST BAY AND HARBOR.

Belfast Bay is the northwestern arm of Penobscot Bay, as Penobscot River is its northeastern arm. It is about three miles wide at its mouth, but rapidly contracts in width to about eight hundred yards at the mouth of the **Passagassawakeag River**, now more commonly known as **Belfast River**. This upper portion of the bay is generally known as Belfast Harbor. The

Sawyer's Point. northern point of entrance to the bay, which is known as Sawyer's Point, and sometimes as **The Beaver Tail**, is cleared, gently sloping, bare of trees and under cultivation, and there are groups of houses on the higher lands, at some distance back from the shore. It is comparatively bold-to. From this point the northern shore has a course nearly **W.** by **N.** for about a mile and three-quarters to **Patterson's Point**, (the northern point of entrance to Belfast River,) and is of moderate height, gently sloping, entirely under cultivation, and well settled.

Brown's Head. Brown's Head, which forms the southwestern promontory of Belfast Bay, is about two miles and three-quarters to the northward of Saturday Cove, (just above Great Spruce Head,) and is high, steep, rocky and wooded. There is a settlement here, called **Brown's Corner**, which is almost exactly opposite to Turtle Head, the northern extremity of Long Island,—the distance between them being a little over four miles.

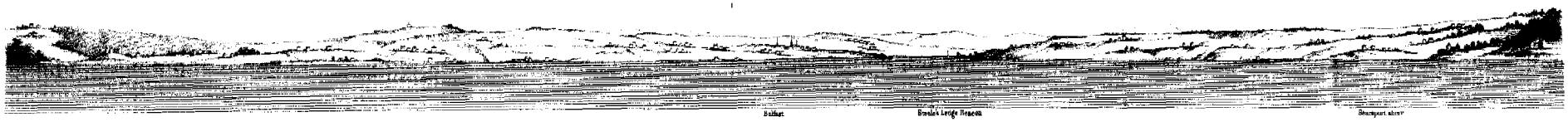
The western shore has a course from Brown's Head about **N.** by **W.** to the southern limits of the city of Belfast, and partakes of the same general character as the northern shore,—being entirely cleared and cultivated and thickly settled. The course of Belfast River is about **NW.** by **N.**, with an average width of about a quarter of a mile, and its shores are cleared, cultivated and thickly settled. The city of **Belfast** is built upon the western bank at its mouth, and is a town of considerable importance. The coastwise trade is principally lumber, but there is a large manufacturing interest and some ship-building. At the northern end of the town the river is crossed by a draw-bridge, through which only such vessels pass as load with lumber at the mills above. The usual anchorage is off the **Steamboat Wharf**, or off **Commercial Wharf**, which is the first large pier to the southward of the former; but vessels may anchor anywhere after passing Goose River Point Ledge.

DANGERS

IN APPROACHING AND ENTERING BELFAST BAY AND HARBOR.

I. ***Coming through West Penobscot Bay.***—In approaching this harbor there are no dangers met with until well past Sawyer's Point, when you must look out for Steele's Ledge, which

Steele's Ledge. will be easily recognized by the large square stone beacon and the two red spar-buoys upon it. The ledge extends **N NW.** and **S SE.** for about three-eighths of a mile, with



View of Belfast Bay and Harbor from West Penobscot Bay, Steele's Ledge Beacon bearing NW. ½ N, distant 2½ Miles.



View of Entrance to Penobscot River from West Penobscot Bay, Fort Pt. Lt. Hs. bearing S. NE, distant 6¼ Miles, and Turtle Head SE. by E. ½ E, distant 2 Miles.

an average width of nearly three hundred yards, and is composed of parallel ridges of hard sand with from three to fifteen feet at mean low water upon them. Between the ledge and the northern shore of the harbor there exists a narrow channel through which three and a quarter fathoms may be taken; but no stranger should attempt this,—it being only used by those who are local pilots. The beacon, which is commonly known as **Steele's Ledge Beacon**, is placed upon the extreme southeastern end of the shoalest of the sand ridges, and is thirty feet high, of the natural color, and surmounted by a pole and barrel. A little over two hundred yards **S.** by **E.** from it, in four fathoms water, is placed a red spar-buoy (No. 2), which marks the southeastern end of the ledge, sometimes called *Harbor Shoal Ledge*. When past this buoy the red spar-buoy on the northwestern end of the ledge will be seen. It is marked No. 4, placed in eighteen feet at low water, and bears from the beacon **NW.** by **N.** $\frac{3}{8}$ **N.**, a quarter of a mile distant. ***Dangers—Belfast Harbor.***

It may be well to remark, in this connection, that the northern shore of the bay from Sawyer's Point to abreast of Steele's Ledge Beacon should not be approached nearer than half a mile, as it is all shoal, and in one place a depth of only three feet is found at a distance of six hundred and fifty yards. The best rule, however, for avoiding these shoals is, when beating into the harbor, not to stand to the northward of Steele's Ledge Beacon bearing **W.** $\frac{1}{8}$ **S.** To the westward of the beacon the northern shore may be approached within a quarter of a mile with not less than twelve feet.

About three-quarters of a mile to the northwestward of the buoy on the northwestern end of Steele's Ledge lies Goose River Point Ledge, which is not in the way of vessels unless they are standing across towards the northern side of the harbor on a wind. This ledge makes off for about two hundred yards from **Goose River Point**, (the eastern point of entrance to **Goose River**,) has from a half to two feet at low water, and bears from Steele's Ledge Beacon **NW.** $\frac{1}{2}$ **N.**, half a mile distant. ***Goose River Point Ledge.***

When past Goose River Point Ledge there are no dangers until up with the town, when, if intending to anchor above Steamboat Wharf, look out for Wharf Ledge, which lies off **Foundry Wharf** (the first above Steamboat Wharf) and about twenty yards from it. It is bare at low spring tides, and is marked by a black spar-buoy (No. 1) placed in five feet on its northeastern end. ***Wharf Ledge.***

The southern shore of the bay from Brown's Head to abreast of the southern extremity of the town of Belfast may be approached anywhere within three hundred yards with not less than three fathoms, except in the vicinity of the cove which makes in on the northern side of Brown's Head; when a berth of three-eighths of a mile will be necessary in order to keep in the best water.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BELFAST BAY AND HARBOR.

I. ***Coming through West Penobscot Bay.***—Continue the course **NE.** by **N.** through the bay until abreast of Great Spruce Head, after which it is usual to haul to the northward, keeping about three-eighths of a mile from shore until up with Brown's Head, when the beacon on Steele's Ledge will be seen, with the red spar-buoy on the southeastern end of the ledge to the southward of it. Pass to the southward of the buoy and steer **NW.** $\frac{1}{4}$ **N.**, which course will lead past Goose River Point Ledge and up with Steamboat Wharf, when anchor in good water, or proceed farther up, at discretion. *Or*, you may continue the course **NE.** by **N.** until Brown's Head bears **NW.** $\frac{1}{4}$ **N.** and Marshall's Point (on Long Island) **NE.** $\frac{1}{2}$ **E.**, when steer **N NW.**, which will lead safely up to the harbor entrance. When Patterson's Point bears **E.** by **S.**, steer **NW.** $\frac{1}{4}$ **N.**, as before, if you wish to pass into the upper part of the harbor.

DANGERS

IN APPROACHING AND ENTERING BELFAST BAY AND HARBOR.

II. ***Coming through East Penobscot Bay.***—This passage leads between Sears' Island on the north and Long Island on the south. The northern extremity of Long Island is called Turtle Head; and about three hundred and fifty yards to the northward of it lies Turtle Head Shoal, with thirteen feet at low water, forming the northern end of the shoals making off from the head. It is not buoyed, but is easily avoided, as the channel is about two miles wide and it is only necessary to keep in the middle. Sixteen feet may be taken between this shoal and Turtle Head, but it is not advisable for strangers to attempt this passage. ***Turtle Head Shoal.***

On the northern side of the channel, and off the southern extremity of Sears' Island, will be seen a black spar-buoy. This is off Brigadier Island Ledge, which extends off in a southwesterly direction from the southwestern end of Sears' Island for about a third of a mile, and is bare two hours before low water. Sears' Island was formerly called Brigadier Island, and the name still clings to the ledge. The buoy is marked No. 1, ***Brigadier Island Ledge.***

and is placed in thirty feet water on the southwestern end of the ledge. When past this ledge there are no dangers until you are up with the stone beacon on Steele's Ledge, which, together with the other dangers in the bay, has been already described.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BELFAST BAY AND HARBOR.

II. ***Coming through East Penobscot Bay.***—On the **N.** by **E.** ¼ **E.** course through the bay, bring Dice's Head Light-house to bear **SE.** by **E.** and steer **NW.** by **W.** until you come abreast of Turtle Head, (which you must pass a quarter of a mile distant,) and when it is abeam steer **NW.** by **W.** ½ **W.**, which will bring you up with the beacon on Steele's Ledge. When this beacon bears **N.** by **E.** ⅛ **E.** steer **NW.** ¼ **N.**, and follow the directions previously given.

Coming from Penobscot River, steer **SW.** by **W.** ¼ **W.** from off Fort Point until Turtle Head bears **SW.** by **S.** ⅛ **S.**; when steer **W.** ⅛ **N.**, which will lead you up with the red buoy on the southeastern end of Steele's Ledge. When Steele's Ledge Beacon bears **N.** by **E.** ⅜ **E.**, steer **NW.** ¼ **N.** and proceed as before directed.

TIDES.

Corrected Establishment	**11h 5m**
Mean Rise and Fall of tides	**9.7 ft.**
Mean Rise and Fall of Spring tides	**10.4 ft.**
Mean Rise and Fall of Neap tides	**8.8 ft.**
Mean duration of Rise	**6h 22m**
Mean duration of Fall	**6h 3m**
Rise of highest tide observed	**11.8 ft.**

SEARSPORT HARBOR.

From Sawyer's Point (the northern point of entrance to Belfast Bay) the shore takes a general course about **NE.** ½ **E.** for a little over a mile and a half to the town of Searsport, situated at the head of a large cove on the northern shore, which is called Searsport Harbor, and affords good anchorage and shelter in all winds except those from the southward. The eastern side of the harbor is formed by **Sears' Island**, formerly called **Brigadier Island**, which separates this harbor from Cape Gellison and the harbor of Stockton. Sears' Island is a mile and three-quarters long, lies **N.** by **E.** and **S.** by **W.**, and is of moderate height. Its southern half is well wooded with a variety of trees, while the rest of the island has alternate woods and cleared fields and there are one or two houses. At its northern end it is connected by a causeway with the mainland.

On the northern side of Sears' Island, between it and **Mack's Point**, (the eastern point of entrance to the cove forming the harbor proper,) makes in **Long Cove**, which is bounded on the east by the causeway connecting Sears' Island and the mainland. Good anchorage may be found in this cove in from ten feet to four fathoms, sheltered from all winds except those from the southward.

Searsport is a small village, of little importance, but is very conspicuous in appearance,—being situated amidst beautifully cultivated fields backed by high, wooded lands,—most of the houses and churches being painted a brilliant white. There are no dangers in entering the harbor except **Brigadier Island Ledge**, mentioned above, which is bare two hours before low water, and extends off in a southwesterly direction from the southwestern point of Sears' Island for about a third of a mile. It is marked by a black spar-buoy (No. 1) placed in thirty feet water on its southwestern end. This buoy is to be left to the eastward by vessels entering the harbor and to the northward by those bound up Penobscot River.

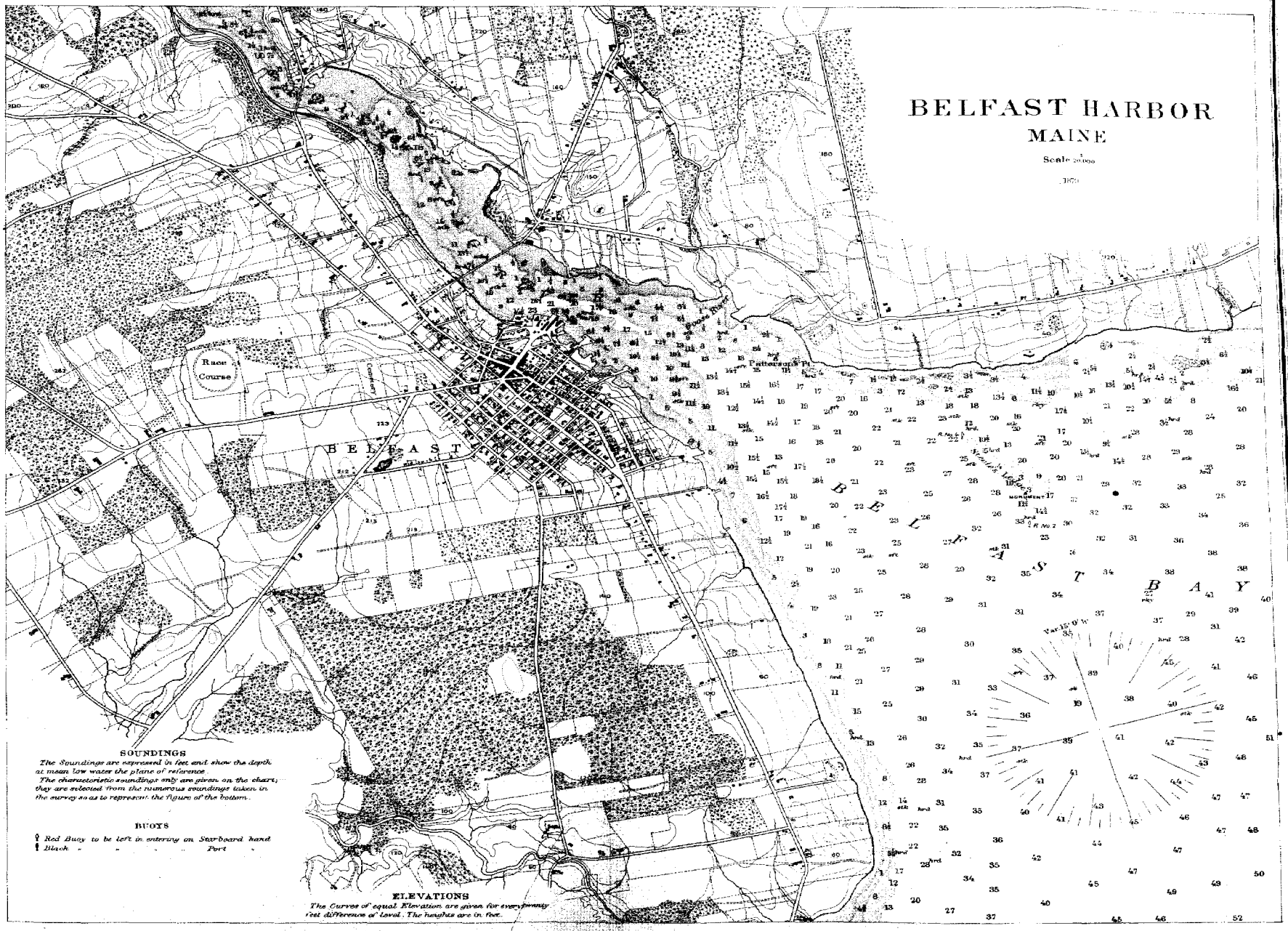
SAILING DIRECTIONS

FOR APPROACHING AND ENTERING SEARSPORT HARBOR.

I. ***Coming through West Penobscot Bay.***—On the **NE.** by **N.** course through the bay, when you are almost exactly midway between Great Spruce Head and Seal Island,—the former bearing **W.** ¼ **N.** and the highest part of the latter **E.** ¼ **S.**,—steer **N.** by **E.** ⅛ **E.**, which will lead you safely to the anchorage off the town. This course passes about one mile and three-eighths to the westward of Brigadier Island Ledge.

II. ***Coming through East Penobscot Bay.***—On the **N.** by **E.** ¼ **E.** course through the bay, bring Dice's Head Light-house to bear **SE.** by **E.** and steer **NW.** by **W.** until abreast of Turtle Head,—the head bearing **SW.** by **S.** and the highest part of Sears' Island **N.** by **E.** ¼ **E.** Now steer **N.** by **W.** ⅛ **W.**, (with the village of Searsport directly ahead,) which will lead you safely into the harbor and up to the anchorage. This course passes a little over three-eighths of a mile to the westward of Brigadier Island Ledge.

PLATE No. 1431



STOCKTON HARBOR.

On the eastern side of Sears' Island, between it and Cape Gellison, is formed a large cove, affording convenient anchorage and shelter in all winds except those from the southward. The village of **Stockton** is situated on its northern shore, although at some distance back from its head, and the cove is usually known as Stockton Harbor. The village has a population of between two and three thousand, but is of little commercial importance. There is, however, some fishing interest, and considerable business in the building of fishing and other vessels.

The eastern point of entrance to Stockton Harbor is formed by **Squaw Point**, sometimes known as **Sandy Point**. It is a sandy bluff, about twenty feet high, and from it makes out a long ledge, bare at half-tide, called **Squaw Point Ledge**. This is the only danger in the approach to Stockton, and is easily avoided by keeping the Sears' Island shore aboard.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING STOCKTON HARBOR.

I. ***Coming through West Penobscot Bay.***—Continue the **NE.** by **N.** course up the bay until you are abreast of Marshall's Point, about half a mile distant, with the northern extremity of Turtle Head bearing **E.** by **N.** $\frac{3}{8}$ **N.**, distant one mile and five-eighths, and you have a depth of twelve fathoms water. Now steer **NE.** $\frac{3}{8}$ **E.**, carrying not less than six fathoms, and continue the course until the southern end of Sears' Island bears **W.** by **N.**; when **N.** by **E.** $\frac{1}{8}$ **E.** will lead you safely to the head of the harbor, where anchor at discretion. These courses pass half a mile to the northwestward of Turtle Head Shoal; nearly seven-eighths of a mile to the southeastward of Brigadier Island Ledge; and three hundred yards to the westward of Squaw Point Ledge.

II. ***Coming through East Penobscot Bay.***—On the **N.** by **E.** $\frac{1}{4}$ **E.** course up the bay towards Cape Gellison, when you are off Castine Entrance, with Dice's Head Light-house bearing **NE.** by **E.** $\frac{3}{8}$ **E.** and Turtle Head **NW.** $\frac{3}{4}$ **N.**, steer **N.**, which will lead you safely up to the entrance; and when exactly midway between Squaw Point and the eastern shore of Sears' Island, steer **N.** by **E.** $\frac{1}{8}$ **E.** to the head of the harbor, as before. These courses pass a little over one mile and three-eighths to the eastward of Turtle Head Shoal, and about two hundred and fifty yards to the westward of Squaw Point Ledge.

PENOBSCOT RIVER.

This river, which is the most important tributary of Penobscot Bay, is about one hundred and thirty miles long, and flows into the northeastern part of the bay, at its head. The southeastern point of entrance is called Dice's Head, and the northern point Cape Gellison. Between the two the river is about four miles and three-quarters wide, but it rapidly diminishes in width, and at Whitmore's Island, a little over eight miles above Dice's Head, it is only about half a mile wide. Hence to **Bangor**, which is about thirty miles above Dice's Head, it is in no place over a mile wide, and through most of its length but little over a quarter or half a mile in width. At Bangor the distance between the wharves on opposite sides of the river is about an eighth of a mile. Bangor is at the head of tide-water and navigation, and is the commercial centre for the river trade. It is built upon the western bank and is the centre of one of the largest lumber-trades on the coast of Maine. The population is about fifteen thousand.

Dice's Head and Light-house.

Dice's Head, the southern point of entrance, is easily recognized, in coming up the bay, by the white light-tower on its summit. It is about five miles above Cape Rosier and about three miles to the eastward of Turtle Head, and forms also the northern point of entrance to Bagaduce River, upon which is situated the town of Castine. It is a steep, rocky bluff, wooded on the edges with a thick growth of fir and spruce, and quite bold-to,—the rocks rising almost perpendicularly from the water. Dice's Head Light-house is an eight-sided stone tower, sheathed with wood and whitewashed, and attached to the keeper's dwelling, which is painted drab. The tower is forty-two feet high, and shows a fixed white light, of the fourth order, from a height of one hundred and thirty feet above the sea, visible seventeen miles. Its geographical position is

Latitude	44° 22′ 57″ N.
Longitude	68° 49′ 9″ W.

Cape Gellison.

Cape Gellison, forming the northern point of entrance to Penobscot River, is an irregularly shaped peninsula, which projects from the mainland in a southerly direction for about two miles into the bay. It is of moderate height, gently sloping, diversified with wooded and cleared lands, and is also pretty thickly settled. **Squaw Point**, its southwestern point, has been already described as the eastern point of entrance to Stockton Harbor. It is sometimes called **Sandy Point**, a name derived from its appearance, which is that of a sandy bluff with perpendicular faces.

Fort Point and Light-house.

Fort Point, sometimes called **Old Fort Point**, is the southeastern point of Cape Gellison, and is nearly three miles to the eastward of Squaw Point and about six miles to the northward and eastward of Dice's Head. It is easily recognizable by the large white hotel, with cupola, which stands a little way back from the pitch of the point, and by the light-house on the eastern end of the point. This light-house, which is known as Fort Point

Light-house, is a square, white tower, twenty-seven feet high, and attached to a low white dwelling-house. It shows a fixed white light, of the fourth order of Fresnel, from a height of one hundred and three feet above the sea, visible fifteen miles. The geographical position of this light-house is

Latitude ..... 44° 28′ 1″ N.
Longitude ..... 68° 48′ 42″ W.

Fort Point is steep, rocky, bare of trees and about eighty feet high. The large, square, stone beacon which will be seen to the southeastward of it is on **Fort Point Ledge**, and is to be left to the southward.

On the eastern bank of the river, from Dice's Head to Whitmore's Island, the shore is of moderate height and nearly flat, and is composed for the most part of cultivated lands interspersed with occasional groves of trees. This part of the shore is formed by the townships of **Castine** and **Penobscot**, and, in common with most of the land in the vicinity of the river, is thickly settled. Seven-eighths of a mile to the northward of Dice's Head is **Block-house Point**, the southern point of entrance to a large cove, called **Wadsworth's Cove**, where anchorage may be had in from six to ten feet; but there is very little shelter. On the northern side of this cove is Perkins' Point, of moderate height, gently sloping, and bare of trees except on its northwestern slopes. The southern part of the point is cleared and has a group of houses upon it. Geographically this point, and not Dice's Head, is the eastern point of entrance to Penobscot River, and Sears' or Brigadier Island the western point.

Perkins' Point.

On the northern side of Fort Point makes in a large cove, known as Fort Point Cove, which affords excellent anchorage and good shelter. This cove makes **E.** and **W.**, and is about two miles wide at its mouth between **French's Point** or **Sandy Point** on the north and Fort Point on the south. Its shores are composed of high lands, with a gradual decline to the water, and are for the most part cultivated.

Fort Point Cove.

French's Point is almost exactly opposite to the southern end of Whitmore's Island, a large island, between four and five miles long, which lies in the middle of the river, about eight miles above Dice's Head. Here the river divides,—a channel passing on each side of the island, that to the westward, however, being considered the Main Channel. Whitmore's Island lies **N.** and **S.**, is of moderate height, diversified with wooded and cleared lands and well settled. The eastern channel of the river passes on the eastern side of this island to the small settlement of **Orland**, about five miles above **The Divide**, and then joins the Main Channel at the northern end of the island, forming the harbor of Bucksport.

Whitmore's Island.

The western bank of the river from French's Point to the point opposite Bucksport is composed of high, gently sloping, well-cultivated and thickly settled shores. Nearly a mile above French's Point is a settlement on the shores of a small cove known as Mill Cove; and about a mile above Mill Cove is another smaller indentation, called Gondola Cove. The square, stone beacon which is seen about half way between these two coves is on **Odom's Ledge**, which is out at half-tide, and may be passed on either side, though it is usual to pass to the eastward of it.

Mill and Gondola Coves.

About seven miles above Fort Point, on the western bank of the river, and opposite to the village of Bucksport, will be seen a large, unfinished granite work, known as **Fort Knox**. It is built upon a steep point covered only with grass and bushes, and forms a very conspicuous landmark.

Bucksport Harbor lies on the eastern bank of the river, directly opposite to Fort Knox, and is formed by the passage between the township of **Bucksport** on the north and Whitmore's Island on the south, by which the eastern branch of the river unites with the western. The village of **Bucksport** occupies the whole of the northern bank of this passage. It has a small fishing-trade, with some lumber and manufacturing interests. The harbor affords good anchorage for vessels of the largest size,—there being not less than five fathoms in the channel, and nothing in the way.

Bucksport Harbor.

At Bucksport the river takes a turn to the westward, having a general course **N.** by **W.** ½ **W.**, to the village of **Winterport**, formerly called **Frankfort**, about five miles above. The western bank, from Fort Knox to Marsh Bay, a little over three miles above, is gently sloping, partly wooded and partly cultivated. Marsh Bay makes in on the western bank about eleven miles above Fort Point and three and a half to the northward of Bucksport. The river here spreads out to the width of a little over a mile, with deep water in the channel, which is diminished in width, however, by flats. Into the southwestern part of the bay flows **Marsh River**, a narrow stream of little importance, which separates into two branches about three-quarters of a mile above its mouth,—the northern branch leading to the village of **Treatville** and the southern branch to that of **Prospect**. Winterport, formerly called Frankfort, lies on the western bank of the river, just above Marsh Bay. The shores in its vicinity and on both banks are undulating, cleared and under cultivation, with occasional groves of trees. Both banks are steep-to,—four fathoms being found within fifty yards of the shore.

Marsh Bay.

Above Frankfort the course of the river is about **NE.** to Oak Point,—the western shore being mostly composed of gently sloping, cleared and cultivated lands, backed by woods, while the eastern bank is steep and high, partly wooded and partly cultivated. Both banks are steep-to,—five fathoms being found within fifty yards of the shore. There is good anchorage anywhere between Marsh Bay and Oak Point, and not less than five fathoms in mid-channel. At Oak Point the river turns to the eastward for about half a mile, then to the northward for about a mile and then to the northwestward a mile and a half.

Oak Point.

Bald Hill Cove.

Bald Hill Cove, the site of a small settlement on the western bank, is a little over five miles above Frankfort. The banks are steep, rocky, partly wooded and partly cleared, in many places showing high, sandy or clay bluffs, steep-to and thickly wooded. Where the bluffs are rocky, fir and spruce trees are frequently seen growing out of their perpendicular faces.

From Bald Hill Cove the river takes a course nearly **N NE.** between two and three miles, passing between the village of **Orrington** on the eastern and **Lower** and **Upper Corners** on the western bank. It gradually diminishes in width from about half a mile at Bald Hill Cove to about six hundred yards at Upper Corners; but has deep water in the channel, with somewhat steep banks.

At Upper Corners the river turns about **NE.**, having a general course in that direction for a little over two miles to **Brewer Village**, which is built on the eastern bank, about a quarter of a mile below the southern limit of Bangor. The water shoals to four fathoms about two miles below Bangor, and the channel hugs the western shore. The banks are high, steep, diversified with wooded and cleared land, and very thickly settled. Many saw-mills line the western bank.

From Brewer Village the general course of the river is about **NE. by N.** between the town of **Brewer** on the east and the city of **Bangor** on the west. The banks are low and sandy. One mile and three-quarters above Brewer Village makes in the **Kenduskeag River**, which divides the town of Bangor into two parts; and a little above this the Penobscot River is crossed by a bridge, which marks the head of tide and for the most part the head of navigation.

Three and a half fathoms may be taken up Penobscot River to abreast of the city of Bangor. There was formerly better water, but even the present depth is gradually diminishing, owing to the immense deposit of saw-dust and slabs from the mills. If some means be not taken to prevent this, the channel of this noble river will in the course of a short time become so obstructed and diminished in depth as to be unfit for navigation by any but small vessels.

DANGERS

IN APPROACHING AND ENTERING PENOBSCOT RIVER.

To vessels coming from either East Penobscot or West Penobscot Bay the first danger met with lies off **Steele's Head**, (which is about two miles and a half above Dice's Head,) and consists of *a long ledge, bare at low water on its western end*, making off to the northwestward for half a mile. This ledge is just to the northward of Steele's Head, and should be given a wide berth as it is not buoyed. A spindle will be recommended to be placed upon it; and, meanwhile, it may be avoided by not approaching the shore in its vicinity nearer than five-eighths of a mile.

On the western side of the entrance, off Squaw Point, (the southwestern extremity of Cape Gellison,) lies *Squaw Point Ledge*, bare at half-tide, which extends off in a southerly direction for three-eighths of a mile and is not buoyed. It is not dangerous except to vessels standing to the westward on a wind. When past it a square, stone monument will be seen ahead, about two miles off, and lying to the southward of Fort Point. This is on Fort Point Ledge, bare at half-tide, which lies about **SE.** by **E.** from the light-house, distant nearly half a mile. It lies **N NW.** and **S SE.** for about three-eighths of a mile, and is to be left to the southward,—the channel leading between it and Fort Point. The monument is a stone beacon of the natural color, and is surmounted by a mast with keg on top.

Fort Point Ledge.

When past the beacon on Fort Point Ledge a black spar-buoy will be seen off the eastern extremity of Fort Point. This is on Fort Point Reef, which extends in an easterly direction from Fort Point for about one hundred and fifty yards, has as little as one foot at mean low water, and is bare at low spring tides. The buoy is marked No. 3, and is placed in five fathoms just to the eastward of the ledge, which is steep-to.

Fort Point Reef.

When past Fort Point Reef there are no dangers until up with French's Point, (or Sandy Point, as it is sometimes called,) the northern point of entrance to Fort Point Cove, when a black spar-buoy will be seen lying about **S SE.** from the point. This is on Sandy Point Ledge, which has about four feet at low water on its southeastern end, and makes off from the point to a distance of six hundred yards. The buoy is marked No. 5, and is placed on the southeastern point of the ledge in five fathoms water. To the northeastward of the buoy, distant seven-eighths of a mile, and about three-eighths of a mile from the Whitmore's Island shore, lies a detached piece of shoal ground, a quarter of a mile long **NE.** and **SW.**, with *seventeen feet at mean low water upon it.* A depth of nearly nine fathoms exists between this shoal and Whitmore's Island.

Sandy Point Ledge.

When past the buoy on Sandy Point Ledge a square, stone beacon will be seen up river about a mile off. This is on Odom's Ledge, which is out at one-quarter ebb on its northern end, and lies about midway between Mill and Gondola coves. It is a detached ledge, a quarter of a mile long **N.** by **W.** and **S.** by **E.**, and may be passed on either side, though it is usual to pass to the eastward of it. The beacon is painted black, with the letters "O. L." in white on each side of it.

Odom's Ledge.

When past Odom's Ledge there are no dangers until past Bucksport and you are up with Marsh Bay, when there will be seen two red spar-buoys about opposite to Marsh River. ***Frankfort Flats.*** These are on the Frankfort Flats, which extend off from **Drachm Point** (on the eastern bank, a little below Winterport) about half way across the river. The buoy first met with is marked No. 4, placed in twelve feet water on the western point of the flats, and is to be left to the northward. The upper buoy is marked No. 2, also placed in twelve feet on the western edge of the flats, and must be left to the eastward. The first-mentioned buoy is so placed as to mark the turning point in the channel, which here leads with a gradual sweep to the northward close along the western shore of the river.

When past the Frankfort Flats there are no dangers until you are beyond Oak Point, when there will be seen ahead an iron spindle, painted red, with a cylinder and cask on top. This ***Buck's Ledge.*** is on Buck's Ledge, which is out at half-tide and is to be left to the eastward. It is about three miles above Winterport, and is the last obstruction met with in the approaches to Bangor.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PENOBSCOT RIVER.

I. ***From East Penobscot Bay.***—The course through the bay from off Western Island is **N.** by **E.** ¼ **E.**, (see page 205,) which will lead, with not less than eight fathoms, to the mouth of Penobscot River. On this course, when you have passed Perkins' Point and Fort Point Light-house bears **NE.** ⅞ **N.**, steer **NE.** ¾ **N.**, and continue the course (passing to the westward of the stone beacon on Fort Point Ledge) until you are almost exactly in line between the beacon and the eastern extremity of Fort Point, with the light-house bearing **N.** ¾ **W.**, distant nearly four hundred yards. Now steer **NE.** by **E.** ¼ **E.**, passing to the eastward of the black buoy on Fort Point Reef; and *if bound into Fort Point Cove* steer boldly in after rounding the buoy, as there is nothing in the way except Sandy Point Ledge on the northern side of the entrance. There is suitable anchorage in this cove for the largest vessels. *But if bound up the river*, when past the buoy on Fort Point Reef, steer over towards Whitmore's Island, keeping about the middle until within nearly half a mile of its southern point, when steer **N.**, keeping the western shore of the island aboard and passing to the eastward of the beacon on Odom's Ledge. When past this ledge, haul to the eastward and steer along the western shore of the island, heading about midway between Fort Knox and the northwestern point of Whitmore's Island, with the houses in the western part of Bucksport directly ahead,—the course being about **N.** by **E.** ¾ **E.** *Wishing to anchor in Bucksport Harbor*, there is nothing in the way but to round the northern point of Whitmore's Island, steer to the eastward and anchor off the village. Not less than five fathoms can be taken as far up as Fort Knox and to the anchorage off Bucksport. *But if bound farther up*, steer about **N.** by **W.** ½ **W.** towards Winterport. Keep the middle of the river until nearly up with the southern point of the entrance to Marsh River, when the red spar-buoys on the Frankfort Flats will be seen, which must be left to the northward and eastward. Should the buoys not be seen, steer over to the westward until **McKenzie's Point** (first point on the eastern shore to the northward of Bucksport) is shut in behind the southeastern point of entrance to Marsh River, and run on this range until the next reach of the river is fairly open. If, however, the buoys are visible, pass to the southward and westward of them, and when the reach is fairly open steer **NE.**, carrying not less than five fathoms, past Winterport, with good anchorage all the way. When up with Oak Point, steer **E.** by **N.** for about a third of a mile until the next reach is fairly open, when the red spindle on Buck's Ledge will be seen about a mile ahead. The course through this reach is about **N.** by **E.** with not less than five fathoms, passing to the westward of the spindle on Buck's Ledge. Continue it for about a mile, or until the next reach (leading up to Bald Hill Cove) is fairly open, when steer **NW.** by **W.**, keeping about in mid-river. At Bald Hill Cove the course changes to **N NE.** for about a quarter of a mile, and then **NE.** for three-quarters of a mile to **Bragdon's Castle.** Through the next reach the course is **N NE.** for about two miles, passing the village of Orrington on the east and Lower and Upper Corners on the west, and carrying not less than four and a half fathoms. At Upper Corners the river turns to the northeastward,—the course being about **NE.** towards Brewer Village, keeping the western shore aboard. About two miles above Upper Corners the water shoals to four fathoms,—the channel still keeping the western shore. At Brewer Village the river turns a little more to the northward, running about **N.** by **E.** ½ **E.** for a third of a mile; then **NE.** by **E.** half a mile; and thence having a general course **N NE.** for nearly a mile, to the usual anchorage off the mouth of Kenduskeag

River. Not less than three and a half fathoms at low water can be taken to the anchorage off the town. The bottom is saw-dust. *Sailing Directions--Penobscot River.*

II. ***From West Penobscot Bay.***—Continue the **NE.** by **N.** course through the bay towards Sears' Island until you are abreast of Marshall's Point, about half a mile distant, with the northern extremity of Turtle Head bearing **E.** by **N.** $\frac{3}{8}$ **N.**, distant one mile and five-eighths, and you have a depth of twelve fathoms water. Now steer **NE.** $\frac{7}{8}$ **E.**, which will lead you safely up to the entrance to Penobscot River, carrying not less than six fathoms and passing to the westward of the stone beacon on Fort Point Ledge. On this course, when you are almost exactly in line between the beacon and the eastern extremity of Fort Point, with Fort Point Light-house bearing **N.** $\frac{3}{4}$ **W.**, distant nearly four hundred yards, as before, steer **NE.** by **E.** $\frac{1}{4}$ **E.**, (passing to the eastward of the black buoy on Fort Point Reef,) and follow the directions for the river previously given. The course for the river entrance passes three-eighths of a mile to the northwestward of Turtle Head Shoal and nearly five-eighths of a mile to the southeastward of Squaw Point Ledge, on the eastern side of the entrance to Stockton Harbor.

LIGHT-HOUSES.

Name.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Dice's Head Light-house	44 22 57	68 49 9	4 35 16.6	Fixed.	130	17
Fort Point Light-house	44 28 1	68 48 42	4 35 14.8	Fixed.	103	15

TIDES.

Corrected Establishment at Belfast	11h 5m
Mean Rise and Fall of tides	9.7 ft.
Mean Rise and Fall of Spring tides	10.4 ft.
Mean Rise and Fall of Neap tides	8.8 ft.
Mean duration of Rise	6h 22m
Mean duration of Fall	6h 3m
Rise of highest tide observed	11.8 ft.

LIGHT-HOUSES IN PENOBSCOT BAY.

Name.	Latitude.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		m. s.	Feet.	
Saddle-back Ledge Light-house.	44 0 51	68 43 35	4 34 54.3	Fixed.	.....	51	12
Heron Neck Light-house	44 1 30	68 51 43	4 35 26.9	Fixed red.	.....	92	14
Mark Island Light-house	44 8 3	68 42 12	4 34 48.8	Fixed.	.....	52	12
Eagle Island Light-house	44 13 3	68 46 4	4 35 4.3	Fixed.	.....	106	15
Pumpkin Island Light-house	44 18 32	68 44 34	4 34 58.3	Fixed.	.....	27	9
Matinicus Rock Light-houses	43 47 0	68 51 18	4 35 25.2	Fixed.	.....	85 & 90	14
White Head Light-house	43 58 42	69 7 28	4 36 29.9	Fixed.	.....	79	13
Owl's Head Light-house	44 5 31	69 2 39	4 36 10.6	Fixed.	.....	105	15
Brown's Head Light-house	44 6 41	68 54 34	4 35 38.3	Fixed.	.....	39	11
Indian Island Light-house	44 9 54	69 3 22	4 36 13.5	Fixed red.	.....	47	12
Negro Island Light-house	44 12 4	69 2 56	4 36 11.7	Fixed.	.....	52	12
Grindel's Point Light-house	44 16 53	68 56 35	4 35 46.3	Fixed.	.....	39	11
Dice's Head Light-house	44 22 57	68 49 9	4 35 16.6	Fixed.	.....	130	17
Fort Point Light-house	44 28 1	68 48 42	4 35 14.8	Fixed.	.....	103	15
Monhegan Island Light-house.	43 45 52	69 18 57	4 37 15.8	Fl'g white.	1 0	175	19

TIDES IN PENOBSCOT BAY.

	Muscle Ridge Channel.	Carver's Harbor.	Rockland Harbor.	Rockport Harbor.	Castine Harbor.	Belfast Harbor.	Fox Islands Thoroughfare.
Corrected Establishment	10h 45m	11h 0m	11h 5m	11h 8m	11h 10m	11h 5m	11h 1m
Mean Rise and Fall of tides	9.4 ft.	9.6 ft.	9.6 ft.	9.8 ft.	9.3 ft.	9.7 ft.	9.7 ft.
Mean Rise and Fall of Spring tides	10.0 ft.	10.1 ft.	10.1 ft.	10.5 ft.	9.8 ft.	10.4 ft.	10.3 ft.
Mean Rise and Fall of Neap tides	8.8 ft.	9.0 ft.	9.1 ft.	9.2 ft.	8.8 ft.	8.8 ft.	9.1 ft.
Mean duration of Rise	5h 56m	6h 17m	6h 19m	6h 14m	6h 24m	6h 22m	6h 11m
Mean duration of Fall	6h 29m	6h 8m	6h 6m	6h 11m	6h 1m	6h 3m	6h 14m

CURRENTS IN PENOBSCOT BAY.

Vessels bound into Penobscot Bay by the Muscle Ridge channel enter, as before mentioned, between Monhegan Island and George's Islands. In their courses for White Head Light-house the following information as to the set of the tidal current will be found of service:

Passing the entrance to St. George's River, the flood sets on to Old Cilley Ledge. A strong flood-current also sets through the passage between Burnt and Allen's islands,—the two southernmost of George's Islands.

If bound into Herring Gut by the Mosquito Island channel it is necessary to be careful, in light winds, not to be set on to Marshall's Point Ledge by the flood-tide, or on to Gunning Rocks, Hart's Bar, or Allen's Ledge by the ebb. As there is no difficulty in getting a head range in this channel, the courses in are easily made good.

Bound from the eastward, into Tennant's Harbor, the flood sets on to the ledges off White Head, Norton's Island Ledges, and the other shoals which obstruct the entrance to Rackliff's and Wheeler's bays. The ebb sets to the southward and eastward, but there are no obstructions on the southern side of the approach. When up with Southern Island, which is bold-to, the flood sets directly in and the ebb almost directly out of the harbor.

More detailed information as to currents will be given as soon as proper observations shall have been made.

VARIATION OF THE COMPASS IN PENOBSCOT BAY.

The magnetic variation for 1879 will be as follows:

Western Entrance to Penobscot Bay	14° 42′ W.
Near the Green Islands	14° 54′ W.
Eggemoggin Reach	15° 40′ W.
Near Inner Bay Ledges	15° 10′ W.
Off Belfast Harbor	15° 40′ W.

The approximate annual increase is about 2½′.

ICE IN PENOBSCOT BAY.

In this bay, except during severe winters, the ice formation is purely local. Beginning at the head of the bay,—in Penobscot River and Belfast Bay,—and in sheltered places along the shores, it gradually extends downward and outward, forming a serious and often insurmountable obstruction to navigation. During calms and light winds from the northward and westward the local formations rapidly increase; while strong winds break them up and force them as "drift-ice" on the shores and into the harbors on the lee side of the bay;—thus forming a more serious hindrance to the navigation of those harbors than the purely local formations. The tidal current is not strong enough to prevent formations of ice, or to oppose to any great extent the action of strong winds in moving the ice.

During severe winters, like that of 1874–5, the ice begins to form a serious obstruction to the movements of sailing-vessels about the middle of January; but steamers are usually able to proceed without much difficulty until the latter part of that month, when both the East and West bays are apt to be frozen entirely across. The ice is composed of "field" and "drift" massed together in such quantities as to completely bar navigation of any kind. To this mass were added, in 1875, great fields of drift-ice from outside, which filled up the mouth of the bay and the approaches to it,—extending out several miles from the coast-line;—and this soon freezing into a solid mass, effectually closed the bay from about the 9th to the 19th of February. The weather moderating about the last-mentioned date, accompanied by winds varying from **SW.** around by the southward and eastward to **NE.**, with snow and rain, caused a general breaking up of the mass; but it did not finally disappear until the latter part of March. To be sure, a great part of this large formation went to sea during the first week in March; but subsequent formations, each lasting but a few days, caused considerable hindrance to navigation as late as the twenty-fifth of that month; and most of the harbors remained closed several weeks after the bay itself was free from all obstructions.

The buoys, being mostly spars, were not drifted from their places, as the ice passed over them instead of massing against them, as in the case of can or nun-buoys.

Matinicus or Ragged Island Roads.—This roadstead is very rarely closed by ice; but during the severe winter of 1874–5 it was entirely shut up by a heavy local formation for several days.

Muscle Ridge Channel.—In this channel ice rarely forms in sufficiently large masses to obstruct navigation; but during severe winters like that of 1874–5 it is apt to be closed during portions of the month of February. During the above-mentioned year no navigation was possible from the 7th to the 21st of February. The formation was mostly "drift-ice," which froze into a solid field.

Strong winds from **N. to NE.** clear the channel, while southerly winds force the drift-ice into it. Tides are sufficiently rapid to prevent extensive local formations, and to remove drift-ice unless the latter is in large masses.

Rockland Harbor.—Formations composed of drift-ice brought in by easterly winds are most frequent in this harbor, and usually offer the greatest obstructions to navigation. The harbor opening to the eastward and being unprotected in that direction, the drifting floes from the bay are driven in by the winds from that quarter,—thus rendering the anchorage unsafe during the winter months.

During severe winters, like that of 1874–5, the principal formation is local, and has been known to extend from the wharves in the harbor across West Penobscot Bay to the Fox Islands, becoming so firm in the harbor and about the wharves that easterly winds had no effect upon it. This ice begins to obstruct the harbor about the first week in January, and remains in the inner harbor until the latter part of March; and navigation is dangerous and even impossible for sailing-vessels from January 20th to

March 22d, and for steamers from February 7th to the middle of March. In 1875 the steam-packet to Carver's Harbor made several trips during the latter period, but they were attended with imminent danger both to the vessel and her passengers. During this winter several drift formations appeared in the outer part of the harbor, after the local formation in West Penobscot Bay broke up; but the harbor-ice was too strong to permit of their entering the inner harbor. **Ice in Penobscot Bay.**

Strong **NW.** winds prevent to a great extent local formations of ice in the harbor, except in extreme cases like 1874–5, when these formations occurred several times. Easterly winds bring in the drift-ice, and westerly winds remove it. The tidal current is too weak to have any great effect either on local or drift-ice.

Rockport Harbor.—Ice forms most rapidly in this harbor during light westerly winds; while strong winds from the northward have a tendency to clear the harbor and its approaches, and to prevent extensive local formations. Southerly winds break up the local ice, unless the approaches are heavily encumbered; in which case the effect of the sea outside is overcome by the "pack" before it can reach the harbor-ice. There is rarely, however, much trouble experienced by steamers in entering this harbor.

During the severe winter of 1874–5 the formation in the harbor, all of which was local, was neither so heavy nor of such long duration as that in the other harbors in West Penobscot Bay. The approaches were, however, very much encumbered between the 24th of January and the 22d of March,—during which period sailing-vessels experienced much difficulty in endeavoring to pass in or out. Steamers, however, could enter and pass out nearly every day;—the exception being the period of extreme cold between the 7th and 20th of February, when, as above, stated, all navigation was suspended.

Tides have no influence on the ice or its movements.

Camden Harbor.—The formation of ice in this harbor is similar to and coincident in point of time with that in Belfast Harbor, (see below.) Neither winds nor tidal currents have any influence on the ice in the harbor itself; but the former have great influence on the "field" and "drift" ice which occur in the approaches to it,—strong winds from **E SE.** breaking the floes, and a strong **NW.** wind, following, carrying them out into the bay. The local formations appear to make more rapidly during light northwesterly winds; while strong winds from the same direction drive the ice to sea if once broken up.

During severe winters, like that of 1874–5, the harbor is apt to be closed in the months of February and March. In that exceptionally heavy winter sailing-vessels could enter and depart until the 20th of January and steamers until the 24th of that month. On the 7th of February a local formation occurred, extending over the entire area of the bay, and closing all navigation in that vicinity until the 13th, when it disappeared. On the 14th another of the same kind and equally extensive occurred; and this latter remained until the 20th. Others followed, and also masses of drift-ice, until the 22d of March; but steamers did not experience any serious delays after the 15th of March.

Belfast Bay and Harbor.—This harbor closes for two or three weeks on an average of one winter in every three; but in severe winters it is often closed for two months and sometimes for three. Winds have usually no effect on the formations; but easterly winds sometimes bring drift-ice into the harbor from the bay. Tidal current has no effect whatever.

During the winter of 1874–5 Belfast Harbor was closed to all navigation from the 24th of January until the 18th of April,—a period of twelve weeks. Even then it was opened artificially by a channel cut in the ice to allow the steamer "Katahdin," which had been frozen in on January 24th, to reach the bay. During this long period there was not a single day on which any vessel could have entered the harbor; and for a large portion of the time the bay was closed all the way to Camden.

Castine Harbor.—Except in severe winters this harbor is closed only during short "cold-snaps," as they are called; and steamers can generally get through. During severe weather like that of 1874–5 it is apt to be closed during February and part of March;—the ice during that memorable winter having absolutely shut up the harbor from February 7th until March 15th, and closing Penobscot River until after the 1st of April. Winds have no effect upon heavy ice; but can only break up and carry off such light formations as occur in mild winters, and which would in any event be of little hindrance to vessels.

LIFE-SAVING STATION.

The United States Government has established on White Head Island, near the light-house, a life-saving station, provided with all the appliances necessary for assisting those who may be shipwrecked or are in distress.

RACKLIFF'S AND WHEELER'S BAYS.

Westward from White Head Island is a deep bay, with many islands and ledges, which extends to Hart's Neck, on the southern side of the entrance to Tennant's Harbor, a distance of two miles and three-eighths. It contains within its limits Rackliff's and Wheeler's bays and Long Cove, in all of which there is good water for vessels of twelve feet draught. To the westward of White Head Island lie, first, **Norton's Island,** (see page 227,) and to the northward of this **Rackliff's Island,** separating Seal Harbor from Rackliff's Bay. Rackliff's Island lies to the southwestward of **Fogg's Point,** (see page 227,) from which it is distant an eighth of a mile; and **Spruce Head Island** (see page 227) lies about five hundred yards to the southeastward of the same point,—**Seal Harbor** lying between the two islands.

The main shore from Fogg's Point turns abruptly to the westward,—its general course being **W. ¼ N.** for one mile and a quarter to Elwell's Point, which is the eastern point of entrance to a long cove making up to the northward and eastward, called **Harrington's Cove.** But although this is the general course of the shore-line, it is very much indented by deep coves. The character of the shores is much the same as that to the eastward of Fogg's Point, being partly wooded, partly cleared, rocky, and from twenty to forty feet high. **Elwell's Point.**

To the southward of Elwell's Point extends a group of islands which separates Rackliff's Bay from Wheeler's Bay. This group is known as **Elwell's Group,** and are four in number. The most northerly, called Calf Island, lies two hundred and twenty-five yards **S.** from Elwell's Point, and its length north and south is three hundred and seventy-five yards. It is merely a bare, rocky island, about twenty feet high, and surrounded by ledges and bare rocks.

Calf Island.

The middle and largest island, called Elwell's Island, is six hundred yards long, and lies **N.** by **E.** and **S.** by **W.**; but it is of very irregular shape,—being only about fifty yards wide in the centre, over two hundred yards at its northeastern end, and four hundred at its southwestern end. Between it and the northern island (one hundred yards off) there is eleven feet water; but this runs into a pocket to the northward of Elwell's Island and is stopped by a flat which is bare at low spring tides.

Elwell's Island.

Between two and three hundred yards **W.** by **N.** from the centre of Elwell's Island is the third of the group, which is simply a bare rock about one hundred and fifty yards in diameter. It is called **Hen Island.**

Eagle Island, the most southerly of the group, lies three hundred and fifty yards **S SW.** from the southern end of Elwell's Island. It is also bare and rocky, lies **E.** and **W.,** and is two hundred and twenty-five yards long.

Rackliff's Bay is contained between Elwell's Group on the west and Rackliff's Island on the east. It lies **N.** by **E.** and **S.** by **W.,** is three-quarters of a mile long, and three-eighths wide at its widest part. Good anchorage may be found in it, but the harbor is of no importance; and the entrance to it is so obstructed by ledges as to render it almost impossible for any one unacquainted to enter. No detailed sailing directions need be, or in fact could be, given unless the ledges should be buoyed.

Wheeler's Bay lies to the westward of Rackliff's Bay, and is contained between the mainland, which here runs to the southward, (**S.** by **W.** from Harrington's Cove to **Clark's Point,**) and Elwell's Group. It thus forms a wide and deep bay of irregular shape,—its general course being **N.** and **S.** Its western shores are very much indented by coves, but these are all shallow and of no importance. Wheeler's Bay is one and a quarter miles long and has an average width of half a mile. Its shores are rocky, mostly wooded with spruce and fir, and vary in height from twenty to fifty feet. It is of little importance as a harbor of refuge, as so much better ones exist near it; and its approaches are so barricaded by ledges and shoals as to render it difficult of access, even to one thoroughly acquainted with the harbor. The western side of the approach to this bay, to the northward of the entrance to Tennant's Harbor, will, for the convenience of those intending to make an anchorage, be found described below.

From Clark's Point the main shore-line runs **W.** by **N.** for three-quarters of a mile to the entrance to **Clark's Cove.** Off this shore, at a distance of only one hundred and thirty yards, lies Clark's Island, extending **N NW.** and **S SE.,** nearly three-quarters of a mile long, and with an average width of three-eighths of a mile. The northeastern shore is low and slopes very gently to the water, and patches of the land are under cultivation, while several houses occupy the southeastern and northeastern faces. The southwestern shores are high and steep,—rising to a height of eighty feet above sea-level. The channel into Clark's Cove runs close under this shore.

Clark's Island.

Two hundred and fifty yards to the southeastward of Clark's Island there is a long narrow islet lying **E.** by **N.** and **W.** by **S.,** and connected at low water with Clark's Island. It is three hundred and seventy-five yards long, and is not named,—being considered by the inhabitants as part of Clark's Island.

Spectacle Islands, or **The Spectacles,** lie nearly three hundred yards **S SW.** from Clark's Island. They are two very small, irregularly shaped islets, separated at high water by a very narrow passage, but united at low water.

High Island lies **S.** by **W.** from The Spectacles, distant two hundred and seventy-five yards. It is nearly round, rocky, with a diameter of four hundred yards, and is covered with stunted fir trees.

About one hundred and seventy-five yards **SW.** from High Island lies Northern Island, irregular in shape, and nearly five hundred yards long. It is of moderate height, rocky, and covered with a very stunted growth of fir. The crest of the island is only forty feet above sea-level, and there is a single house near the western end, from which to the point the land is low and bare except for a solitary spruce tree here and there. This island forms the northern part of the entrance to Tennant's Harbor and the eastern point of Long Cove.

Northern Island.

DANGERS

IN APPROACHING AND ENTERING WHEELER'S AND RACKLIFF'S BAYS.

The principal dangers in the approaches to Wheeler's and Rackliff's bays are Norton's Island Ledges, which extend off from the southern end of Norton's Island nearly across both bays,—a distance of one mile and a quarter. They are a group of ledges with deep-water channels between them, through which, however, only those well acquainted with the shoals dare to venture. The most easterly of these ledges runs **N.** by **E.** and **S.** by **W.,**—its northern end being two hundred yards to the westward of the southwestern point of Norton's Island. It is half a mile long, and both ends of it are distinctly marked by bare rocks. Although there are slue channels across this ledge, no one should attempt to cross between the two islets. Two hundred yards **N NW.** from the northern end of this ledge lies *a shoal with seven feet on it.* Between Norton's Island and the easternmost ledge a narrow channel with nineteen feet at low water exists; and between the easternmost ledge and the seven feet shoal the same amount of water may be carried.

Norton's Island Ledges.

The middle ledge begins three hundred yards **W SW.** from the southwestern extremity of Rackliff's Island and runs **S SW.** for three-quarters of a mile. Its southern extremity is marked by a large bare rock about two hundred and fifty yards long. Between the middle ledge and the eastern ledge over three fathoms may be carried, but the channel is narrow. ***Dangers--Wheeler's and Rackliff's Bays.***

A quarter of a mile **W.** by **S.** from the dry middle ledge lies another bare shoal, which is, however, of small extent. A channel with from three to eight fathoms water, and over three hundred yards wide, passes between this shoal and the middle ledge.

One mile and a quarter from Norton's Island, and nearly four hundred and fifty yards **W.** by **N.** from the small bare ledge just mentioned, lies the westernmost ledge, which is composed of two bare rocks lying **N.** by **E.** and **S.** by **W.** from each other and surrounded by shoals Between this ledge and the small one to the eastward of it a channel over two hundred and fifty yards wide passes, with from four to eleven fathoms water. A five-feet rock lies **N.** by **E.** from the northern end of this shoal, at a distance of two hundred yards; and there is a depth of four fathoms between it and the western shore.

Clark's Point Ledges, sometimes called *Clark's Island Ledges*, are bare at low water, lie in a group of three, **S SW.** from Clark's Point, distant from it nearly three-eighths of a mile, and are not buoyed.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING WHEELER'S AND RACKLIFF'S BAYS.

No detailed sailing directions can be given for these harbors; but it may be remarked in general that the best entrance to both bays is to the westward of the westernmost of the Norton's Island Ledges. This channel is three-eighths of a mile wide and has from five to eight fathoms at low water. Its western boundaries are the three small islands which separate it from Long Cove, and which, beginning at the southernmost, are Northern Island, High Island and The Spectacles.

Wishing to enter Wheeler's Bay by this channel, when abreast of Tennant's Harbor Light-house steer **NE. ¼ N.**, (passing midway between the islands and the western end of Norton's Island Ledges,) and continue this course until the southern ends of Norton's and White Head islands are in range. Then steer **N.** by **E. ¼ E.**, and anchor in four fathoms, soft bottom. For the passages between the ledges the chart will be the best guide.

Vessels entering by the southwestern channel must be careful to give Clark's Island (the large island to the northward of The Spectacles) a berth of at least three-eighths of a mile to avoid the flats which make off from its eastern end.

To enter Rackliff's Bay by the same channel; when, on the course **NE. ¼ N.**, White Head Light-house bears **E.** by **S. ¾ S.**, steer **E. ½ N.** for the southern end of Rackliff's Island, which will just hide the northern point of Norton's. When abreast of Eagle Island steer **E NE.**, and anchor at discretion, in from three to four fathoms, under Rackliff's Island.

TENNANT'S HARBOR.

This excellent harbor lies five miles **N NW.** from Metinic Island and three miles **W SW.** from Seal Harbor. It is an arm of the sea, running **E.** and **W.**, and is one mile and a quarter long, with an average width of four hundred and fifty yards. The entrance is between Northern Island on the north, and a rocky island, called Southern Island, on which the light-house is built; and the southern side of the harbor is formed by a well-cleared and settled peninsula called Hart's Neck. Not only the southern shores, but the western and northern, are well settled,—the village of Tennant's Harbor occupying the northwestern shores.

Southern Island lies a quarter of a mile **S.** from Northern Island, and forms the southern point of entrance to Tennant's Harbor. It extends **E SE.** and **W NW.**, is six hundred yards long, and varies in width from one hundred to two hundred and seventy-five yards. Its eastern end, on which the light-house is built, is nearly seventy feet high, but the tower is built part of the way up the slope. The land is bare, and slopes gently from the eastern to the western end, where it is quite low, and there are a few lone pine trees on the summit. **Southern Island.**

On the eastern end of Southern Island, forty feet above sea-level, is built Tennant's Harbor Light-house, the guide to Tennant's Harbor. It is a white tower, twenty-six feet high, showing a revolving red light, of the fifth order of Fresnel, from a height of sixty-nine feet above sea-level. The lantern and the keeper's dwelling are both whitewashed. This light flashes at intervals of one minute and is visible thirteen miles. Its geographical position is **Tennant's Harbor Light-house.**

Latitude	**43° 57′ 39″ N.**
Longitude	**69° 11′ 6″ W.**

Hart's Neck, as before mentioned, forms the southern side of the harbor. It is mostly cleared, and slopes gradually from its crest (which is from sixty to eighty feet above high-water mark) to the water's edge. The houses on the summit appear, to a vessel coming from the eastward, over the western end of Southern Island; and the northeastern end of the neck, as seen from seaward, is fringed with a low growth of spruce trees. **Hart's Neck.**

After passing between Southern and Northern islands, a large cove opens from behind the latter, extending about NE. to the southwestern side of Clark's Island. This is Long Cove, a mile long, with an average width of eight hundred yards. The entrance to it is between Northern Island on the east and the eastern end of the peninsula, (on which the village of Tennant's Harbor is built,) which forms the western side of the entrance. Between these two points the entrance is three-eighths of a mile wide, but is contracted and obstructed by a group of small islets extending off from the western shore to a distance of three hundred and seventy-five yards; and the deepest water is exactly midway between the most easterly of these islets and the western shore of Northern Island. The course in is N. by E. ¼ E. from this point, and nine feet at low water can be taken up to the southwestern end of Clark's Island.

Long Cove.

There is also a passage between The Spectacles and Clark's Island by passing about one hundred and fifty yards to the eastward of High Island, and, when abreast of its southeastern point, steering for the middle of the southern end of Clark's Island until exactly between The Spectacles and the small islet which lies to the southeastward of Clark's Island; when keep the southwestern shore of Clark's Island aboard, and anchor at discretion.

The eastern point of the peninsula, on which the village of **Tennant's Harbor** is built, is sixty feet high, but slopes gradually to the water. To a vessel coming from seaward it appears as a thickly wooded point covered with a thick growth of pine, birch, maple, etc. On its southern end a wharf is built out, and a warehouse stands at its head. The settlement appears a little to the left of this point and directly ahead, at the upper end of the cove. The land is low, cleared and dotted with houses,—the whole being backed by thick woods.

DANGERS.

Coming from the eastward, there are no dangers except *The South Breaker*, which lies eight hundred yards S. from White Head Light-house. It has been already described, (see page 249,) and is marked by a bell-buoy, and also by a red spar-buoy placed on its southwestern end.

Coming from the southward, there are no dangers except Hart's Ledge, which lies about four hundred and fifty yards from the shore of Hart's Neck and nearly one mile SW. ¾ S. from Tennant's Harbor Light-house. It is composed of two bare rocks about two hundred yards NE. and SW. from each other; but lying so close to the shore it is of little importance.

Hart's Ledge.

These are all the dangers met with in the approaches to this harbor. The only ledge of any importance in the harbor is Harbor Ledge. It lies one hundred and fifty yards off the northern shore of Hart's Neck and nearly three-quarters of a mile W NW. from the light-house, has two feet at mean low water, and is not buoyed.

Harbor Ledge.

SAILING DIRECTIONS.

I. ***Coming from the Northward and Eastward.***—Round White Head Island close-to, in about eight fathoms, and bring Tennant's Harbor Light-house to bear W. ¼ N. Steer for the light, carrying not less than six fathoms, until within half a mile of it; when steer W. by N. ¾ N. into the harbor, and anchor at discretion in from two to four fathoms.

II. ***Coming from the Eastward.***—Coming in by the Two-Bush Channel, (see page 272,) bring White Head Light-house to bear NW. by W. ½ W. and Tennant's Harbor Light-house W. by N. ¼ N., with eighteen fathoms water, and steer for the latter until White Head Light-house bears NE. ¼ E., with fifteen fathoms, muddy bottom; when steer W. by N. ¾ N., as before.

III. ***Coming from the Southward.***—Steer NE. ¼ E. for White Head until Tennant's Harbor Light-house bears N. by E. and the southern end of the large rocky island known as Mosquito Island, two and a half miles SW. from Southern Island, bears W. by N. ¾ N. and is in range with Marshall's Point Light-house. The depth at this point is fourteen fathoms and the course N. by E. ¼ E., carrying not less than ten fathoms, and passing three hundred and fifty yards to the eastward of Tennant's Harbor Light-house. Continue this course until the light-house bears W. by S. ¼ S., with ten fathoms, when steer NW. ¼ N., with not less than nine fathoms, for nearly a quarter of a mile, until the light-house bears SW. by S. ¼ S. Now steer W. by N. ¾ N. to the anchorage.

LIGHT-HOUSE.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		m. s.	Feet.	
Tennant's Harbor Light-house	43 57 39	69 11 6	4 36 44.4	Rev., red.	1 0	69	13

TIDES.

Corrected Establishment	10h 45m
Mean Rise and Fall of tides	9.4 ft.
Mean Rise and Fall of Spring tides	10.0 ft.
Mean Rise and Fall of Neap tides	8.8 ft.
Mean duration of Rise	5h 56m
Mean duration of Fall	6h 29m

CURRENTS.

The tidal current has little effect on the courses inside the harbor, but in Muscle Ridge Channel there is sometimes a strong current. This current, however, sets right up and down the channel, and does not affect the course, but only the speed of vessels. As the course into Tennant's Harbor is almost directly across the axis of this channel, the effect will be to set vessels bound for the entrance either towards the northern or southern shores. Mariners must therefore be careful, in passing along the southern shore of White Head Island, that they are not set on to the long ledges which make off to the southward from that shore. By keeping the bearing of Tennant's Harbor Light-house, however, all dangers will be avoided.

VARIATION OF THE COMPASS.

The magnetic variation for 1879 is 14° 48′ W., with an approximate annual increase of 2′.

MOSQUITO HARBOR.

From Hart's Neck the coast takes a SW. course for two miles to Mosquito Head. The shore is merely bare rock, from twenty to eighty feet high, crested here and there with low fir trees. Mosquito Head is rocky, densely wooded with fir and spruce, and forms the eastern point of entrance to a large but shallow cove which here makes in to the northward for five-eighths of a mile and is called Mosquito Harbor. This cove has an average width of an eighth of a mile, with nine feet at low water in the channel for about half its length, and is unobstructed; but is little used except by very small coasters and fishing-boats. The best entrance to it leads close under Mosquito Head, between it and Mosquito Island, where from three to five fathoms may be carried; after which the water shoals gradually to the anchorage. There are no dangers, and it is only necessary to keep off the shores. The course in is W. by N. ½ N., keeping Mosquito Head rather the best aboard until the long tongue-like point on the western shore just above the village bears N. by E., when it may be steered for until past the small rocky island on the eastern shore, where anchorage will be found in thirteen feet at low water. Above this the water shoals rapidly to three feet.

Mosquito Head.

The small settlement on the western shore of the cove is called **Mosquito Village**, and is inhabited principally by fishermen.

ST. GEORGE'S RIVER.

From Mosquito Harbor to the westward the coast has a general course W. by S. ½ S. for about a mile and five-eighths to Marshall's Point, the eastern point of entrance to Herring Gut, which is also the eastern passage into St. George's River. The shore is much like that to the eastward,—being low, rocky, dotted here and there with small groves of spruce and fir, and with occasional cleared fields appearing well back from the shore-line. It cannot be closely approached, however, on account of the numerous ledges and shoals which lie along its face; and the approach to it is still further guarded by a number of islands and islets which stretch nearly from Mosquito Head to the main entrance to St. George's River.

Of these islands the largest and most noticeable is Mosquito Island, which lies three-eighths of a mile SW. from Mosquito Head, is five-eighths of a mile long, of moderate height, in many places bare of trees and in others dotted with scattered clumps of spruce and fir. Its southern end is low and bare with the exception of two or three scraggy fir trees on its extreme point; and there is a lone house on the summit of the island, near its northern end.

Mosquito Island.

There is no passage between Mosquito Island and the main shore except the channel between it and Mosquito Head, leading into Mosquito Harbor, as before described. A bar with five feet at low water joins the island to the main shore a little to the westward of the entrance to Mosquito Harbor, and there are several bare ledges to the westward of the bar, between the mainland and Mosquito Island. The channel leading into Herring Gut from the eastward passes along the southern shore of the island, between it and a group of islets known as Hay Ledge and The Brothers, and is about half a mile wide, with from three to eleven fathoms in it.

Hay Ledge is a small, bare, rocky island lying half a mile to the southwestward of Mosquito Island, and may be approached from the eastward to within one hundred and fifty yards with five fathoms water. About five hundred yards WNW. from it are The Brothers, a group of three rocky islets, bearing about W. by S. ½ S. from the southwestern end of Mosquito Island, distant five-eighths of a mile. They are all bare rocks with the exception of the southernmost and largest, which has a group of four or five fir trees on its northeastern end. There are no passages among them, but an excellent and unobstructed passage with five fathoms exists between them and Hay Ledge.

The Brothers.

Another passage, with from seven to eleven fathoms, leads between The Brothers and the Gunning Rocks, which lie to the westward of them, about three-eighths of a mile distant. The Gunning Rocks are two low, bare, rocky islets lying in a NE. and SW. direction, and connected at low water. There are deep channels on all sides of them,—the main entrance to Herring Gut from the eastward passing to the northward of them and the

Gunning Rocks.

Description of St. George's River. Middle Passage to the westward; but there are dangerous sunken ledges in their vicinity, and as a rule they should receive a good berth.

The entrance to St. George's River is between Marshall's Point on the east and Gay Island on the west, between which two points it is two miles and three-quarters wide, but obstructed by many islands and ledges, by which are formed three principal channels. The easternmost, called Herring Gut, runs between Marshall's Point and Hooper's Island; the Middle or Main Channel passes between Hooper's Island and George's Islands; while the westernmost, sometimes called the North Channel, enters between Caldwell's Island (the northernmost of George's Islands) and Gay Island,—the western point of entrance to the river.

But the approaches to this river, whether from the eastward or westward, are rendered extremely difficult to strangers by the outlying islands and ledges, which extend in a great mass from Mosquito Head to the westward, into Muscongus Bay, for a distance of nearly nine miles; and through and among which lead various passages, with water sufficient for vessels of the largest size, but most of which require local knowledge for their successful navigation. Of these there are

Channels into St. George's River. five, however, by which, with ordinary care, the mouth of the river may be safely approached, viz: The Western Passage, which leads between Harbor and Franklin's islands in Muscongus Bay, and is three-eighths of a mile wide; the Old Hump Channel, which crosses the shoals by a slue with not less than ten fathoms in it, and receives its name from the bare rocky islet known as The Old Hump; the South Channel, which leads along the western shore of George's Islands, and is properly the main entrance to the river from the westward; the Middle Channel, which leads along the eastern shore of George's Islands; and Herring Gut, (before mentioned,) which leads close along the eastern shore, between it and Hooper's Island. There is still another passage, very commonly used by coasters not only when bound into or out of St. George's River, but also when bound along shore to the eastward or westward. It passes between Thompson's and Davis' islands, (two of George's Islands,) has not less than four fathoms and three-quarters in the channel, and is known as the Davis' Straits Passage.

The general course of St. George's River is **NE.** by **E.**; and its length to **Thomaston,** the head of navigation, is exactly ten miles At Thomaston it receives the waters of two small streams, called **Mill River** and **Warren River,**—the town being situated on the peninsula embraced between the two. It is a thriving place, with considerable ship-building interest; but the principal trade is in lime.

Marshall's Point, the eastern point of entrance to St. George's River, is high and bare, but extends off into a low rocky ledge from six to ten feet above high water, on which the light-house is built. The eastern channel into

Marshall's Point. Herring Gut passes close around this point, leaving the Gunning Rocks well to the southward and Hart's Island and Hart's Bar well to the westward. This point is a little over two miles to the westward of Mosquito Head and nearly seven miles to the westward of White Head,—the western point of entrance to Penobscot Bay.

On the eastern extremity of Marshall's Point is built the light-house called Marshall's Point Light-house, which is the guide to the approach to St. George's River through Herring Gut. The tower is of granite and brick, twenty-

Marshall's Point Light-house. four feet high, and is connected with the keeper's dwelling (which stands on the higher ground behind it) by a covered way, painted brown. The upper half, which is of brick, is whitewashed, but the granite, which forms the lower part of the tower, remains of the natural color. The light is fixed white, of the fifth order of Fresnel, and is shown from a height of thirty-one feet above the level of the sea, visible ten miles. Its geographical position is

Latitude ..... 43° 55′ 2″ N.
Longitude ..... 69° 15′ 41″ W.

Gay Island, on the western side of the entrance to St. George's River, is a mile and a half long and of very irregular shape,—its southern shore especially being much indented by coves. Of these the largest and most important is

Gay Island. **Gay Cove,** which has thirteen feet water in it, and penetrates the island to within about forty yards of its northern shore, thus almost cutting it in two. The island is of moderate height, with its eastern and western ends cleared, but the most of the southern shore is wooded. It is separated from the mainland to the northeastward of it by a narrow shallow passage, called **Pleasant Point Gut,** which has twelve feet at high water, and is used by small vessels in passing from St. George's River into Muscongus Bay.

Monhegan Island. The most prominent landmark in approaching this river either from the eastward or westward is Monhegan Island, the westernmost of the outlying islands off Penobscot Bay. It is situated in

Latitude ..... 43° 46′ N.
Longitude ..... 69° 18′ W.

and is distant from Cape Ann (Thatcher's Island) about eighty-four miles on a **NE.** ½ **E.** course; from Seguin nineteen miles on an **E.** course; and from Matinicus Rock Light-houses about twenty miles on a **W.** by **N.** course. Monhegan lies **NE.** and **SW.,** and is a mile and a half long, high, with steeply sloping shores, and quite bold-to. Its northeastern end, called **Green Point,** is high and wooded; and a little to the southward of this, on the eastern face of the island, is a bluff, precipitous head, called **Black Head.** Thence the surface gradually descends towards the southwestern end, which is low and thickly wooded, and is known as **Lobster Point.**

Monhegan Light-house. About the middle of Monhegan Island, on a bare summit a hundred and forty feet high, is built the light-house, called Monhegan Light-house, a grey stone tower, thirty-six feet high, connected with the keeper's dwelling by a white porch, and showing a revolving white light, of the second order of Fresnel,

from a height of one hundred and seventy-five feet above the sea. The light revolves at intervals of one minute, and should be visible from a vessel's deck, on a clear night, nineteen miles. It is usual to look for it immediately after passing Seguin. The geographical position of Monhegan Light-house is

Latitude ..... 43° 45′ 52″ N.
Longitude ..... 69° 18′ 57″ W.

Manana Island and Fog-signal.

Close in with the western shore of Monhegan, about two hundred yards off, lies a small bare island, called Manana Island. It is about three-eighths of a mile long **N NE.** and **S SW.**, and is bare of all vegetation except grass. Upon it is situated the fog-signal for the western approach to Penobscot Bay, a first-class Daboll trumpet, (in duplicate,) placed in a high building adjoining the keeper's dwelling, and giving blasts of fifteen seconds at intervals of forty seconds. A bell is rung in case of necessity. The geographical position of the fog-whistle is

Latitude ..... 43° 45′ 46″ N.
Longitude ..... 69° 19′ 36″ W.

Monhegan Harbor.

Between the northern end of Manana and the western face of Monhegan are two bare islets, which form, with Manana and Monhegan, a small harbor of refuge, called Monhegan Harbor. It has from sixteen feet to seven fathoms in it, and there are no dangers; but it is open to the southward. From northerly, easterly and westerly winds it is well protected.

About a quarter of a mile to the northeastward of Manana, and two hundred yards from the western shore of Monhegan, lies a small bare island, called **Inner Duck Rock**; and on the northern side of this islet makes in what is known as **Deadman's Cove**, in which anchorage may be found in from two to seven fathoms, in fine weather or with easterly winds.

George's Islands.

George's Islands lie on the eastern side of Muscongus Bay and obstruct the approaches to the St. George's River. They extend in a line nearly **N NE.** and **S SW.** for about five miles, and are composed of sixteen islands of various sizes, which, beginning with the southernmost, are named as follows: Allen's, Burnt, Benner's, Davis', Thompson's, Barter's, McGee's, Two-Bush, Bar, Seavey's, Stone, Teal, Eagle, Caldwell's and Little Caldwell's islands.

Allen's Island.

Allen's Island, the southernmost and largest of the group, is nearly a mile and a half long in a **NE.** by **N.** and **SW.** by **S.** direction, and has an undulating surface, part of which is under cultivation and part clothed with a very thick growth of spruce and fir. Its southern end bears **N.** by **E.** ½ **E.** from Monhegan Light-house, distant about five miles and a half.

Burnt Island.

Burnt Island, the next largest of the group, lies half a mile to the eastward of Allen's Island, and is partly cultivated and in places very thickly wooded. Between it and Allen's Island eight fathoms may be taken, but the passage is obstructed by the dangerous **Dry Ledges**, which lie nearly midway between the two islands,—the best water being found on the Burnt Island side. Off its northwestern end lies a small island, connected with it at low water, and called **Little Burnt Island.**

Benner's Island.

Benner's Island lies off the northwestern end of Allen's Island, from which it is separated by a passage about two hundred yards wide, with three and a half fathoms at low water. It is rocky, with a few fir and spruce trees scattered over its surface, lies **NE.** and **SW.**, and is nearly seven hundred yards long.

Davis' Island.

Davis' Island lies about three-eighths of a mile **N NE.** from Allen's Island, and is half a mile long in a **NE.** and **SW.** direction. Its surface is rocky and covered only with thin grass, and there is a depth of from four to six fathoms all around it. On its southern side, between it and Allen's and Benner's islands, is good anchorage in from four to eleven fathoms in what is known as **George's Harbor**; and to the westward of it, between it and Thompson's Islands, is a passage from two hundred and seventy-five to five hundred yards wide, called **Davis' Straits.** This passage has four and three-quarter fathoms and is very frequently used by coasters.

Thompson's Islands.

Thompson's Islands consist of one large and four small islands, extending nearly **N NW.** and **S SE.**,—the southernmost being about three hundred and fifty yards to the northwestward of Davis' Island and forming the western side of the passage called Davis' Straits. They are all very small with the exception of the northernmost, which is half a mile long, low, rocky, covered with a thin growth of fir and spruce, and has several houses on its eastern side. The others are for the most part bare, although some have scattered trees and clumps of fir upon them.

Barter's Island.

To the northeastward of the largest of Thompson's Islands are two others, lying **N.** and **S.** from each other, very close together, and appearing as one island from nearly every point of view. The southernmost is called Barter's Island, and is separated from Thompson's Islands by a passage five hundred yards wide, with eight fathoms water, but much obstructed by bare and sunken ledges. The island lies **N NE.** and **S SW.**, is over seven hundred yards long, and wooded with spruce and fir. On its northern side Barter's Island is separated by a very narrow passage, dry at low water, and about one hundred and twenty-five yards wide, from McGee's Island. This island lies **N.** by **E.** and **S.** by **W.**, is nearly half a mile long, of moderate height, and well wooded. There is deep water close to it on all sides except the southern and southwestern, but strangers should not approach it closely. To the westward of it, and about one hundred and seventy-five yards off, lies **Two-Bush Island**, with a passage between them through which twenty-five feet at low water may be taken with perfect safety.

McGee's Island.

From Two-Bush Island a long ledge, dotted with bare rocks, extends to the northeastward for a quarter of a mile, but is very bold-to and always visible.

Bar Island. Bar Island lies three-eighths of a mile to the eastward of McGee's Island, with from three to seven fathoms between them, and is nearly three hundred yards long. Its name is derived from a long shoal, dry at low water, which extends to the northeastward from it nearly three hundred yards. It lies on the western side of the Middle Channel, with from three to seven fathoms all around it, and is bold-to on its eastern, western and southern sides.

Seavey's Island. To the northwestward of Bar Island, and at a distance of a little over five hundred yards, lies Seavey's Island, about a quarter of a mile long, with a thin growth of fir trees upon it and a group of houses on its northern end. Between it and McGee's Island there passes a channel about three hundred yards wide, with from six to ten fathoms at low water; and between it and Bar Island, to the eastward, twenty-five feet may be taken, but the channel is narrow and dangerous.

About seventy-five yards to the northwestward of Seavey's Island is a very small rocky island called **Ram Island**; and two hundred yards **NE.** from it, but connected with it at low water, lies Stone Island, low, rocky and bare, four hundred yards long in an **E.** and **W.** direction, and surrounded by shoal water. Nearly three hundred yards to the northward of it lie the **Eagle Islands**, two small rocky islands, connected at low water, and surrounded by shoals and ledges. They are low, and with the exception of one or two fir trees on the larger island are entirely bare; and there is no passage between them and Stone Island.

Stone Island.

Teal Island. Teal Island lies about three hundred and seventy-five yards to the eastward of Stone Island and half a mile to the westward of Hooper's Island, with the Middle Channel into St. George's River between them. It lies **N NE.** and **S SW.**, is nearly six hundred yards long, of moderate height, cleared at its northern end, but wooded with spruce and fir at its southern end. A passage with six fathoms, but narrow and dangerous, leads to the northward, between Teal Island on the east and Stone and Eagle islands on the west, and joins the North Channel at the southwestern end of Caldwell's Island.

Caldwell's Island. A quarter of a mile to the northward of Teal Island lies Caldwell's Island, the northernmost of George's Islands. It extends **NE.** and **SW.**, is over half a mile long, of an oval shape, for the most part bare of trees, but with a thin growth of fir and spruce on its southern and southwestern sides. About one hundred yards to the southeastward of it lie **Little Caldwell's Islands**, which are joined at low water, and are low, rocky, and entirely bare of trees. The Middle Channel into St. George's River passes to the eastward of Caldwell's Islands, the North Channel to the westward of them, and both channels unite at the northern end of the northernmost Caldwell Island. This latter has bold water both on its eastern and western sides, and may be safely approached within one hundred yards with four fathoms.

A narrow and intricate channel, through which three and a half fathoms may be carried, passes close under the southern shore of Caldwell's Islands, and thence between Teal Island and Little Caldwell's Islands, thus connecting the North Channel with the Middle Channel.

Hooper's Island. Hooper's Island lies in the mouth of St. George's River, close to its eastern bank, and forms the western shore of Herring Gut. Its southern end is three-quarters of a mile to the eastward of Bar Island, while its northern end lies about half a mile **SE.** by **E.** ½ **E.** from Little Caldwell's Islands. It extends nearly **NE.** and **SW.**, is seven-eighths of a mile long, of moderate height, and for the most part bare of trees. The southern part of the island, however, has its crest covered with a dense growth of fir, while the slopes are bare of trees and grassy except where a few lone trees dot the surface at long intervals. The northern end is lower than the southern, cleared, cultivated and settled, while the eastern face of the island is almost all wooded. A bar, over which not more than nine feet can be carried, crosses from the northern end of Hooper's Island to Raspberry Island on the eastern side of Herring Gut, and closes the passage to vessels of large draught except at the top of high water.

Hart's Island. About five-eighths of a mile **S.** from Hooper's Island, and three-quarters of a mile **SW.** by **S.** ½ **S.** from Marshall's Point Light house, lies Hart's Island, low, sandy, bare of trees, with a level surface covered with grass, and with perpendicular sandy faces. It is nearly round, three hundred yards in diameter, and from it a long dry sand-spit, with scattered boulders upon it, extends nearly in a **N.** and **S.** direction for half a mile, and is called **Hart's Bar.** Between this bar and Hooper's Island there is an excellent passage with seven fathoms water, which is called the **Western Channel into Herring Gut.**

Hart's Island is remarkable as being the only sandy island in this vicinity,—all of the others being rocky.

Herring Gut. The eastern bank of St. George's River above Marshall's Point curves to the eastward and then to the northward and westward, forming the harbor of Herring Gut, a much frequented anchorage for coasters. Upon this shore is built the village of **South St. George**, formerly called **Herring Gut Village.** It is a small settlement with some fishing interest, but of little importance otherwise,—trade being absorbed by Thomaston. At the northern end of the village there juts out a bluff point, (with flat, grassy summit, and a line of wharves along its southern side,) called **Hutchinson's Head.** A small cove makes in on its northern side, called **Fish Cove,** and here is a marine railway, upon which vessels occasionally go for repairs.

Raspberry Island. In the middle of the channel, and near the northern end of the Gut, lies a bare islet, surrounded by shoals, called Raspberry Island. From this to Hooper's Island extends a bar, over which nine feet can be taken; but there is also another passage between Raspberry Island and the eastern shore. This latter passage has also nine feet, but is narrow and crooked.

Blubber Island is a small rocky island with five or six spruce trees upon it, which lies off the northern shore of Hooper's Island at a distance of two hundred and fifty yards; but there is no passage between the two.

A little over half a mile above Raspberry Island, and a mile and a quarter from Marshall's Point, is Hooper's Point, which is of moderate height, with wooded summit and slopes, but cleared near the shore-line. It is comparatively bold-to,—five fathoms being found within one hundred and twenty-five yards of the shore,—and it forms the southern extremity of a large cove, called **Deep Cove** on the charts, but now commonly known as Marshall's Cove. This cove is contained between Hooper's Point on the south and Howard's Point on the north,—the distance between the two being five-eighths of a mile. There is from three to five fathoms in it, but the anchorage is insecure,—the bottom being rocky and covered with kelp of enormous size and length, where if an anchor be lost it is almost impossible to be recovered. At the head of the cove several ice-houses formerly existed, and some trade was carried on in that commodity; but they are now deserted and fast falling into ruins.

Hooper's Point.

Marshall's Cove.

Howard's Point, the northern point of entrance to Marshall's Cove, is five-eighths of a mile to the northward of Hooper's Point and nearly two miles above Marshall's Point Light-house, with an unobstructed channel between it and Caldwell's Island seven-eighths of a mile wide, with from six to thirteen fathoms water. The point is of moderate height, with somewhat steep slopes, thinly wooded with spruce and fir, and should not be approached nearer than an eighth of a mile, as there are several outlying ledges.

Howard's Point.

A little above Howard's Point, on the western bank of the river, will be seen the entrance to **Pleasant Point Gut**, which makes to the westward between Gay Island and the mainland, forming a passage for small vessels at high water into Davis' Cove and Meduncook River. The northern point of its eastern entrance is called Pleasant Point, and is a mile and an eighth above Caldwell's Island and three-quarters of a mile **N.** by **W.** ½ **W.** from Howard's Point. It is of moderate height, with gentle grassy slopes, backed by woods, and may be approached within two hundred yards with six fathoms water.

Pleasant Point.

Nearly opposite to Pleasant Point, and three-quarters of a mile above Howard's Point, on the eastern bank of the river, is Turkey Cove, which makes in to the southeastward for about three-quarters of a mile with an average width of five hundred yards. It affords good anchorage in from two to three fathoms, soft bottom, with an easy and gradual approach; but is dry at low water a quarter of a mile from its head. Its shores are for the most part cleared and under cultivation.

Turkey Cove.

The northern point of entrance to Turkey Cove is called Turkey Point, and is grassy, low, and backed by woods. Turkey Point is a mile **NE.** from Howard's Point and seven-eighths of a mile **E.** by **N.** from Pleasant Point; and should not be approached nearer than two hundred yards, as there are dangerous ledges near it. On its northern side makes in a large but shallow cove nearly half a mile wide at its mouth, but which should not be entered, as it is shallow and obstructed,—as is in fact the whole of the eastern shore from Turkey Point to The Narrows.

Turkey Point.

Nearly opposite to, but a little above Turkey Point, and on the western bank of the river, is **Stone Point**, a low, nearly level, grassy point, with several houses upon it, which lies seven-eighths of a mile to the northward of Pleasant Point and forms the southwestern point of entrance to a large cove, called Maple Juice Cove, which extends to the northward for a mile and three-eighths. The northern point of the entrance to this cove is called **Burton's Point**, and is very gently sloping, bare of trees and grassy. The cove itself is full of shoals and unfit for strangers; although anchorage may be found for vessels of light draught anywhere between Burton's and Stone points. The latter must not be approached closely, as there is a dangerous ledge, known as **Henderson's Ledge**, about an eighth of a mile from its eastern end, which is, however, marked by a buoy.

Maple Juice Cove.

About six hundred yards to the eastward of Burton's Point is **Bird Point**, which is also cleared, but somewhat more abrupt than the former. Between the two is contained a small cove into which seven feet may be taken; but the point itself is shoal and should not be approached nearer than an eighth of a mile. It is the western point of the southern entrance to The Narrows, which are formed by the two banks of the river suddenly approaching each other, leaving a passage from five to six hundred yards wide with thirteen fathoms water in it. This passage is about three-quarters of a mile long, entirely unobstructed, with steep shores on both sides, and has a strong tidal current. Its southern end is two miles and a half above Caldwell's Island and about six miles and a half below Thomaston.

The Narrows.

At the northern end of The Narrows the river widens out rapidly, the eastern shore curving away to the eastward and southward and forming a long but shallow cove, known as Otis' Cove, which affords anchorage for vessels of light draught only. It has a general course about **S.** for five-eighths of a mile,—both banks being cleared,—but the eastern shore is steep and its summit crowned with houses, while the western shore is much lower and nearly level. At Bird Point, on the western bank of the river, the shore is wooded; but above The Narrows it is for the most part cleared, with somewhat steep slopes, and well settled. It is very irregular in outline, being penetrated by several coves, which are, however, shallow and of little importance.

Otis' Cove.

A little over a mile above the northern end of The Narrows, and about a mile and five-eighths above Bird Point, is **Bailey's Point**, long, low, flat and cleared, which forms the southwestern point of the entrance to a large but very shallow cove, called Broad Cove. This cove makes to the northward nearly a mile, and affords anchorage to vessels of light draught only. The northern point of entrance to it is called **Bradford's Point**, and is low, gently sloping and wooded; and between it and Bailey's Point the entrance is three-quarters of a mile wide. Bailey's Point

Broad Cove.

is very shoal, and must not be approached nearer than three-eighths of a mile. Bradford's Point may be approached within three hundred yards with over three fathoms, and within two hundred yards with two fathoms.

Opposite to Broad Cove, on the eastern bank of the river, is a passage about three-eighths of a mile wide, which is the common entrance to the two coves, called Cutler's and Watts' coves. This entrance lies nearly three-quarters of a mile above Otis' Cove and is quite shallow,—the best water being seven feet.

Cutler's Cove. Cutler's Cove runs to the northeastward for over a mile with an average width of three hundred and fifty yards, but is nearly all bare at low water, and is of no importance. It makes in behind, or to the eastward of, a long narrow point of moderate height, (with a clump of trees upon its summit, but with grassy and somewhat steep slopes,) called **Watts' Point.** This point is pretty bold-to on its western side, and may be approached within one hundred and fifty yards with five fathoms water. On its southern side, however, it is quite shoal,—nine feet being the best water found between it and the southern point of the common entrance.

Watts' Cove. The southernmost of the two coves is called Watts' Cove. Its course is about **S SW.** for three-quarters of a mile, (for the most of which distance it is only about two hundred yards wide,) and it is entirely bare at low water.

Between Bradford's and Watts' points the river is half a mile wide; but above this gradually diminishes in width until, at Fort St. George, about a mile and a half above, it is only about three hundred yards wide, but with deep water in the channel. The shores are for the most part cleared and cultivated, with houses dotting the higher grounds; but there are occasional groves of trees and steep, rocky banks, especially on the western shore.

Fort St. George. At Fort St. George, which is three miles below Thomaston, the land is cleared and nearly level on the summit, but with somewhat steep slopes, and extends off into a long, level point, with steep faces, which is the site of the old work. It is about seven miles above Caldwell's Island and five miles above Pleasant Point.

Hyler's Cove. Above Fort St. George the river rapidly widens to half a mile, and about seven-eighths of a mile above the fort it spreads out into a bay three-quarters of a mile wide, with a very narrow channel running through the middle of it between dry flats. Both shores are cleared, cultivated and settled, with nearly level surfaces, and somewhat steep banks. On the western shore of this bay, two miles above Bradford's Point, makes in a large cove, called Hyler's Cove, which is bare at low water. It runs **N NW.**, is half a mile long, and five-eighths of a mile wide at its mouth. From the northern point of the entrance to this cove the mouth of Warren River is distant a little over a mile and a half.

Above Hyler's Cove both shores are low, cleared and cultivated, though there are occasionally groves of trees; and there is a steep bluff, thinly wooded, at the southern point of the entrance to Warren River. Nearly the whole width between the banks is occupied by immense flats, dry at low water,—the channel being a mere thread passing between them. It has good water, however,—not less than three fathoms being taken as far as the large fish-weir off Hospital Point, and eleven feet up to the town.

Hospital Point. Hospital Point is on the eastern side of the river, two miles and a half above Fort St. George, and five-eighths of a mile below Thomaston. It is a long, low, flat and narrow point, entirely bare of trees, running in a **N NE.** direction, and has dangerous bare ledges extending from it to the northward to the edge of the channel. A large fish-weir extends from the western side of the point to the edge of the channel, a distance of nearly a quarter of a mile, and serves as a guide to keep vessels off the flats. There are also several other fish-weirs on the western bank.

Above Hospital Point the river again spreads out into a wide and very shallow bay, into which empty Mill and Warren rivers. **Mill River** is a narrow stream, making in to the northward on the eastern side of the town of **Thomaston**, and is dry at low spring tides. **Warren River** makes to the westward, and Thomaston is built upon its northern bank. This stream is narrow,—not being over a hundred and twenty-five yards wide abreast of the town,—but has eight feet at low water in the channel as far as the bridge, which is a quarter of a mile above its mouth.

DANGERS

IN APPROACHING AND ENTERING ST. GEORGE'S RIVER.

I. ***Coming from the Eastward, through Herring Gut, by the Eastern Passage.***—There are two channels into Herring Gut from the eastward. That most commonly used passes between Mosquito Island and The Brothers, leaving Hay Ledge and the Gunning Rocks to the southward; and is partially marked by buoys. The other passes to the westward of Gunning Rocks, be-

Barter's Shoal. tween them and Hart's Island, and the entrance only is buoyed. Coming in by the former, the first danger met with lies almost exactly in the middle of the channel and is called Barter's Shoal. It is a small pinnacle rock, with fifteen feet at mean low water, and lies six hundred yards off the southern shore of Mosquito Island and the same distance due **E.** from Hay Ledge. It is not buoyed, but is easily avoided by keeping either shore aboard.

When past Barter's Shoal there are no precautions necessary except to keep off Hay Ledge and The Brothers until up with Mosquito Island Ledge, which lies on the northern side of the channel, and will be easily recognized by the black spar-buoy on its southern end. It has seven

Mosquito Island Ledge. feet at mean low water, and bears from the southwestern end of Mosquito Island **NW.** by **W. ½ W.**, three-quarters of a mile distant; from Marshall's Point Light-house **E. ¼ S.**, nearly seven-eighths of a mile distant; and must be left to the northward by vessels entering Herring Gut from the eastward. The buoy is marked No. 9, placed in four fathoms

about twenty-five yards **SE.** from the shoal of the ledge, and is painted black, as a guide to vessels which have come through Davis' Straits and are bound along shore to the eastward.

When up with the buoy on Mosquito Island Ledge look out, on the southern side of the channel, for the Gunning Rock Ledges, which are two detached shoals with four and five feet water,—the northernmost of which is a quarter of a mile **NE.** by **N.** from the northernmost of the Gunning Rocks. The other, which has five feet at low water, lies two hundred yards **W SW.** from the four feet rock. There is deep water close to them and they are not buoyed; but from the northern rock Marshall's Point Light-house bears **NW.** by **W.** ¼ **W.**, nearly three-quarters of a mile distant. At night by watching this bearing, and in day-time by not approaching the Gunning Rocks nearer than five hundred yards, these ledges may be avoided. ***Gunning Rock Ledges.***

When past Gunning Rock Ledges a black spar-buoy will be seen ahead, near Marshall's Point, and about half a mile off. This is on Marshall's Point Ledge, which extends two hundred and fifty yards **S SE.** from Marshall's Point, has eight feet at low water and no passage in-shore of it. The buoy is marked No. 7, placed in four fathoms a little to the eastward of the ledge, and is painted black, as a guide to vessels which have come through Davis' Straits and are bound to the eastward along shore. Vessels bound into Herring Gut from the eastward pass about two hundred yards to the southward of it and then steer to the northward, keeping not less than that distance from the buoy to enter the Gut. ***Marshall's Point Ledge.***

When past Marshall's Point Ledge there are no dangers in the channel until up with the bar at the northern end of Hooper's Island; but if the wind be scant or ahead and it becomes necessary to beat in, look out, in the first place, for Hart's Bar and Allen's Ledge, which lie on the western side of the channel and are very dangerous. Hart's Bar is a long shoal, composed of sand and gravel, extending in a nearly **N.** direction from Hart's Island for about eight hundred yards; and for nearly the whole of that distance is dry at three-quarters ebb, and has several rocks out at low water scattered along its eastern edge. About an eighth of a mile beyond the northern end of the dry shoal lies Allen's Ledge, which has two feet at low water, and is in reality the northern end of the bar. This ledge is marked by a red spar-buoy (No. 4) placed in three fathoms on its northern end. Vessels entering Herring Gut from the eastward pass well to the eastward of this buoy, leaving it on the port hand notwithstanding its color,—as it is painted red as a guide to vessels which have come through Davis' Straits and are bound to the eastward along shore. Allen's Ledge is three hundred and fifty yards to the southward of the southeastern point of Hooper's Island and half a mile **N.** from Hart's Island. ***Hart's Bar and Allen's Ledge.***

On entering the Gut, if obliged to beat, do not stand too close to the eastern shore when near Marshall's Point, as there is *a rock awash at low water* close to the shore on that side, and about an eighth of a mile to the northward of Marshall's Point Light-house. Also, on the Hooper's Island shore, about three-eighths of a mile to the northward of Marshall's Point Light-house and three hundred yards from the island, there is another rock with five and a half feet at low water, marked by a black spar buoy (No. 5), and known as Hooper's Island Ledge. The buoy is in three fathoms about ten yards from the rock, on its southeastern side; and vessels using this channel pass to the eastward of it. *The rock awash* is not buoyed, nor is it dangerous except to vessels beating through the Gut, which should use the lead constantly and go about as soon as the water shoals to seventeen feet on either side. ***Hooper's Island Ledge.***

Hooper's Island Bar extends from the northeastern point of Hooper's Island entirely across the Gut. From the middle of it rises a bare rocky islet known as **Raspberry Island**, on each side of which there is a channel across the bar with nine feet at low water. The western passage, however, is the wider of the two, and quite straight, and is the one commonly used. ***Hooper's Island Bar.***

When over the Bar there are no more dangers in the Gut; only, in standing to the westward on a wind, Blubber Island must not be approached nearer than one hundred and fifty yards, as it is quite shoal on its eastern and southern sides. The course leads to the northwestward towards the northern end of Caldwell's Island; and a spar-buoy, painted red and black in horizontal stripes, will appear directly ahead. This is on Channel Rock, a detached ledge, with seven feet at low water, which lies a quarter of a mile **W.** by **N.** from Hooper's Point, with from three to six fathoms on all sides. The buoy is placed on the rock and may be passed on either hand, but vessels which have come through the Gut usually pass to the eastward of it, between it and Hooper's Point. When up with it, the course leads to the northward, past Howard's Point, which should receive a berth of not less than an eighth of a mile to the eastward to avoid the rocks which lie along its western face. ***Channel Rock.***

When up with Turkey Point do not approach its northern end nearer than four hundred yards in any direction, as there are several sunken ledges and rocks awash off this side of the point.

Off Stone Point, on the western side of the river, and in the mouth of Maple Juice Cove, will be seen a black spar-buoy. This is on Henderson's Ledge, which has two feet at mean low water, and extends from Stone Point **E.** for two hundred and seventy-five yards. The buoy is marked No. 3, placed in eighteen feet on the eastern end of the ledge, and must be left to the westward. ***Henderson's Ledge.***

Above Henderson's Ledge there are no directions necessary other than to keep off the shores, and not to approach Bird Point nearer than three hundred yards until above The Narrows and off the mouth of Otis' Cove, when another black spar-buoy will be seen ahead, nearly in mid-river. This is on Bailey's Ledge, awash at mean low water in some places and dry at low spring tides. It extends from Bailey's Point **SE. ½ S.** for over one-third of a mile; and the buoy, which is marked No. 5, is placed in three fathoms about one hundred yards from its southeastern end. Bailey's Ledge is sometimes called *Fullerton's Ledge.*

Bailey's Ledge.

A quarter of a mile **NW.** from Watts' Point is *a spot with eighteen feet at mean low water*, nearly in the middle of the channel, and which is probably the northwestern end of the shoals which extend from Cutler's Cove to within fifty yards of this spot. In the absence of positive information, vessels drawing over twelve feet should not, unless at high water, pass to the eastward of it.

Above Fort St. George the channel becomes narrow and keeps the western shore rather the best aboard,—the water shoaling very abruptly on both sides. None but a very quickly working vessel can beat through it above the fort, as it is not over a hundred and seventy-five yards wide in its widest part, and the flats, which are dry at low water, extend to the edge of the three-fathom curve. With a fair wind low water is the best time to pass up this river, as not less than sixteen feet can be taken up to the red buoy off Hospital Point, and the limits of the channel are clearly defined by the bare flats on each side.

At Hyler's Cove the channel turns towards the middle of the river with a width of about one hundred and twenty-five yards; but on approaching the northern side of the cove it again hugs the western shore. Above this cove it keeps the middle of the river until up with Hospital Point. The red spar-buoy which is seen about four hundred yards to the northwestward of this point is on Hospital Point Rocks, a line of ledges extending in a **NW.** by **N.** direction from the point to a distance of four hundred yards, and composed of one rocky islet, from which to the northward and westward a line of ledges, dry at low water, extends. The buoy, which is marked No. 4, is placed on their northwestern end, and the channel passes to the westward of it, (keeping the western shore aboard,) and leads to the northeastward towards a stone beacon, about three-eighths of a mile off, which marks the western limits of the channel at the entrance to Warren River and the eastern end of the dry flat which makes off from the southern point. The channel turns around this beacon to the westward, and runs along the wharf-line of Thomaston towards the bridge. It is exceedingly narrow, with but eight feet at low water, and not safe for strangers. From the beacon across to the eastern shore of St. George's River, a distance of five-eighths of a mile, there is nothing but a mass of flats, dry at low water.

Hospital Point Rocks.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING ST. GEORGE'S RIVER.

I. ***Coming from the Eastward, through Herring Gut, by the Eastern Passage.***—On the course **SW.** by **W.** from White Head Light-house, bring Marshall's Point Light-house to bear **W NW.**, with thirty fathoms water, and steer for it, carrying not less than seven fathoms, until the northernmost of the Gunning Rocks bears **SW.** by **S. ¾ S.** or is exactly abeam, when the depth will be nine fathoms and three-quarters, and the course **N. ½ W.**, with not less than four and a half fathoms, until past the black buoy on Marshall's Point Ledge and Marshall's Point Light-house bears **N.** by **E.** The depth will be four and a half fathoms, and the course for the mouth of the Gut is **N.** by **W. ½ W.**, carrying not less than seven fathoms for a quarter of a mile, or until Marshall's Point Light-house bears **NE.** by **E. ¼ E.**, two hundred and fifty yards distant. The depth will be eight fathoms, and the course thence to the anchorage off the village **NE.** by **N. ¼ N.** Anchorage in from three to six fathoms may be had anywhere to the southward of Hutchinson's Head.

But, intending to enter St. George's River; when within one hundred yards of the western end of Hutchinson's Head, in about five fathoms, steer **N NW.**, which course will lead across the bar, midway between Raspberry Island and the northeastern end of Hooper's Island, in not less than nine feet at low water. Continue it—steering exactly for the western extremity of Hooper's Point—until Blubber Island bears **W.** by **N.**, a quarter of a mile distant, when steer **NW. ¼ W.** towards the northern end of Caldwell's Island, (with which the buoy on Channel Rock will be in range,) and carrying not less than seven fathoms water. Continue this course for three-eighths of a mile until within four hundred yards of Channel Rock, in twelve fathoms water, with the western end of Howard's Point bearing **N.** by **E.**, when steer **N. ¼ W.** for one mile and an eighth until past Howard's Point, and the southern point of entrance to Pleasant Point Gut (which is also the northeastern point of Gay Island) bears **NW. ¼ N.** The depth will be fourteen fathoms, and the course thence is **NE. ½ N.**, with the black buoy on

Henderson's Ledge a little on the port bow. This course carries not less than thirteen fathoms and leads up to Turkey Point. When the southern extremity of this point bears E. by S. ½ S., with a depth of thirteen fathoms, steer NE. ¾ E. through The Narrows, carrying not less than four and a half fathoms, and heading directly for the buoy on Bailey's Ledge. When within a quarter of a mile of this ledge, in seven fathoms water, alter the course to the eastward so as to pass to the eastward of the buoy in seven fathoms; and when past it steer NE. ¾ E. towards Fort St. George, carrying not less than five fathoms. When within half a mile of the fort, in six and a half fathoms, the course is NE. ¼ N. for a little over three-quarters of a mile, carrying not less than five fathoms and keeping about the middle of the river; then NE. for five-eighths of a mile until off the entrance to Hyler's Cove, in six fathoms; when the course is NE. by N. ¾ N. across the mouth of the cove for about half a mile with not less than five and a half fathoms. When abreast of the northern point of entrance to the cove, in six fathoms, the course is NE. ¼ N. for three-quarters of a mile, carrying not less than four fathoms, until the northern extremity of Hospital Point bears E. by N. ⅛ N.; when the course is NE. by N. for nearly three-eighths of a mile to the red buoy on Hospital Point Rocks. Pass to the westward of this in three and a half fathoms, and steer NE., carrying not less than seven feet to the stone beacon off the mouth of Warren River. Leave the beacon to the westward,—carrying seven feet water,—steer to the westward into Warren River, and run alongside the wharves. *Sailing Directions—St. George's River.*

The above courses pass an eighth of a mile to the northward of Barter's Shoal; a quarter of a mile to the northward of Hay Ledge; one hundred and fifty yards to the northward of The Brothers; two hundred and fifty yards to the southward of Mosquito Island Ledge; nearly a hundred yards to the northward of the northernmost of the Gunning Rock Ledges; four hundred yards to the northward of the Gunning Rocks; one hundred and seventy-five yards to the southward, and two hundred and fifty yards to the westward, of Marshall's Point Ledge; a quarter of a mile to the eastward of Allen's Ledge; about a hundred and fifty yards to the westward of the rock awash off Marshall's Point; a hundred yards to the eastward of Hooper's Island Ledge; three hundred yards to the eastward of Channel Rock; four hundred yards to the westward of Howard's Point; the same distance to the eastward of the buoy on Henderson's Ledge; three hundred and fifty yards to the eastward of Bird Point; fifty yards to the eastward of the black buoy on Bailey's Ledge; seventy-five yards to the westward of Fort St. George; fifty yards to the westward of the red buoy on Hospital Point Rocks; and close-to, to the eastward of the beacon off Warren River entrance.

DANGERS

IN APPROACHING AND ENTERING ST. GEORGE'S RIVER.

II. ***From the Eastward, through Herring Gut, by the channel between Gunning Rocks and Hart's Island.***—Only the entrance to this channel is buoyed. It is a little over half a mile wide, and will be recognized, not only by Hart's Island and the Gunning Rocks, (between which it passes,) but also by a black can-buoy nearly two miles S. from Marshall's Point Light-house, and which marks the western side of the entrance to this channel. This buoy is on Old Cilley Ledge, an extensive and dangerous ledge a mile and a half to the northeastward of Burnt Island, and dry at low water. It lies between the bearings of S. and S SE. from Hart's Island,—its eastern end, on which the buoy is placed, bearing S. from Marshall's Point Light-house, distant a mile and seven-eighths, and S. ¾ W. from the westernmost Gunning Rock, distant a mile and a quarter. It extends W. by N. and E. by S., and about midway of its length is crossed by a very narrow channel with three fathoms water. The buoy (marked No. 3) is placed in eight fathoms about seventy-five yards to the eastward of the ledge, and is to be left to the westward by vessels using this channel. *Old Cilley Ledge.*

When past the buoy on Old Cilley Ledge there are no buoys until up with Marshall's Point Ledge; but there are several dangerous shoals, which will be described in order; and of these the first is the shoal spots north of Old Cilley Ledge. Of these there are five, but only two of them are dangerous to vessels entering by this passage. The first, which has seventeen feet at low water, lies three-eighths of a mile N. from the black buoy on Old Cilley Ledge and over three-quarters of a mile SE. by S. from Hart's Island. The second is nearly two hundred yards NW. from it, and has twelve feet at mean low water. From Hart's Island it bears SE. by S. ½ S., three-quarters of a mile distant, and from Marshall's Point Light-house S. ⅛ W., a mile and three-eighths distant. The other shoals lie to the westward of these, and have eighteen, fourteen and sixteen feet, respectively. *Shoal Spots N. of Old Cilley Ledge.*

Black Rock, which is the next danger met with in this passage, is a bare, rocky islet surrounded by shoals, and lies three-quarters of a mile **N.** by **W.** ¼ **W.** from the black buoy on the Old Cilley; **SE.** by **S.** from Hart's Island, three-eighths of a mile distant; and **S.** ¾ **W.**, a little over a mile from Marshall's Point Light-house. The shoal water extends from the rock to the westward two hundred yards; to the northward over three hundred yards; and to the eastward one hundred and fifty yards. Four hundred yards to the northeastward of the dry rock is *a kelp rock with fifteen feet water upon it*, but it is not buoyed.

Black Rock.

The sailing-lines pass to the eastward of this kelp rock as well as of Black Rock, and to the westward of Gunning Rock Shoal, which lies on the eastern side of the channel, exactly opposite to Black Rock, (from which it is half a mile distant,) and **S SE.** from the westernmost Gunning Rock, three-eighths of a mile distant. From Marshall's Point Light-house it also bears **S SE.**, a little over a mile distant,—the light-house being in range with the westernmost of the Gunning Rocks. This shoal has four and a half feet water upon it, and is not marked in any way; but a buoy has been recommended to be placed upon its southwestern end.

Gunning Rock Shoal.

When past Gunning Rock Shoal, a vessel drawing over twelve feet should watch the bearing of Marshall's Point Light-house to avoid being set on to a *fifteen feet shoal*, which lies three hundred and fifty yards **W.** by **S.** from the western Gunning Rock and eight hundred yards **E.** by **N.** from Hart's Island. It is a small detached rock, with six fathoms all around it, and may be passed on either hand, although the sailing-lines pass to the eastward of it. The name *Middle Shoal* has been suggested for this danger.

When past the Gunning Rocks the western side of the channel is limited by Hart's Bar, bare at low water for a distance of seven hundred yards, and having a number of small rocks scattered along its extent. This bar runs nearly **N.** to the end of the dry spit, and then turns **N NE.** for about three hundred yards; and its northern end is marked by a red spar-buoy, which, however, must be left to the westward by vessels using this passage. This northern end of the bar is called Allen's Ledge, has two feet at mean low water, and lies half a mile to the northward of Hart's Island and three hundred and fifty yards to the southward of the southeastern point of Hooper's Island. The buoy, which is marked No. 4, is placed in three fathoms on the northern end of the ledge, and the sailing-lines pass to the eastward of it,—its color indicating that it is a guide to vessels bound to the eastward along shore.

Hart's Bar and Allen's Ledge.

On the eastern side of the channel, and opposite to the buoy on Allen's Ledge, will be seen a black spar-buoy. This is on Marshall's Point Ledge, which has eight feet at low water, extends **S SE.** from Marshall's Point two hundred and fifty yards, and must be left to the eastward notwithstanding the color of the buoy, which is intended as a guide to vessels bound along shore to the eastward. The buoy is placed in four fathoms on the southeastern side of the ledge, is marked No. 7, and when past it the channel is clear to the entrance to the Gut.

Marshall's Point Ledge.

For a description of the dangers in Herring Gut and St. George's River, see pages 307–308.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING ST. GEORGE'S RIVER.

II. ***From the Eastward, through Herring Gut, by the channel between Gunning Rocks and Hart's Island.***—Bring Marshall's Point Light-house to bear **N.** ¾ **W.**, distant two miles and a half, with thirty-four fathoms water, and steer for it, carrying not less than ten fathoms, until exactly between Hart's Island and Gunning Rocks,—the westernmost of the latter bearing **E.** ¾ **N.**, or exactly abeam, and an eighth of a mile off. The depth will be six fathoms, (with Middle Shoal about a hundred yards to the westward,) and the course thence is **N.** by **W.**, carrying not less than five fathoms, to the entrance to Herring Gut. On this course, when past Marshall's Point Light-house and it bears **SE.** by **E.** ¼ **E.**, two hundred and fifty yards off, steer **NE.** by **N.** ¼ **N.** towards Hutchinson's Head, and follow the directions given for the Herring Gut passage on pages 308–309.

The above courses pass a quarter of a mile to the eastward of the black buoy on the Old Cilley; nearly four hundred yards to the eastward of the twelve-feet kelp rock between the Old Cilley and Black Rock; five hundred yards to the eastward of Black Rock; a quarter of a mile to the westward of Gunning Rock Shoal; one hundred yards to the eastward of Middle Shoal; an eighth of a mile to the westward of Marshall's Point Ledge; and nearly six hundred yards to the eastward of Allen's Ledge.

There is still another passage into Herring Gut, through which fourteen feet may be taken by passing to the westward of the Old Cilley and between Black Rock and Hart's Island. To enter it, bring Marshall's Point Light-house to bear **N.** by **E.** ¼ **E.** and steer for it until within three hundred and fifty yards, when **N.** by **W.** ¼ **W.** leads up to the mouth of the Gut; after which the directions for

passing through the Gut are to be followed. On the above courses fourteen feet will be found half a mile S. from Hart's Island and a quarter of a mile SW. ½ W. from Black Rock; but in no other place is there less than three and a half fathoms. The course for Marshall's Point Light-house passes half a mile to the westward of the black buoy on the eastern end of the Old Cilley, and a hundred and seventy-five yards to the westward of the western end of that ledge; two hundred and seventy-five yards to the westward of Black Rock; and the same distance to the eastward of the dry spit S. of Hart's Island. This channel, however, is not safe for strangers.

DANGERS

IN APPROACHING AND ENTERING ST. GEORGE'S RIVER.

III. ***From the Eastward, by the Middle Channel.***—This channel, before mentioned, leads along the eastern shores of George's Islands, and is a mile and five-eighths wide at its entrance, (between Burnt Island on the west and Old Cilley Ledge on the east,) and maintains this width until up with Hooper's Island, where it contracts to three-quarters of a mile in width. This width it keeps, with little variation, until it joins the channel from the eastward off Howard's Point.

There are no dangers in the mouth of the Middle Channel, but vessels beating in should beware, when standing to the eastward, of Old Cilley Ledge; and of Carey's Rock when standing to the westward. Old Cilley Ledge, before described, (see page 309,) lies on the eastern side of this channel, and extends in a nearly E. and W. direction between the bearings of S. and S SE. from Hart's Island. In this direction it covers a space nearly half a mile long,—both ends being dry at low water; but a narrow channel with three and three-quarter fathoms divides it into two ledges nearly midway of its length. On the eastern end is placed a black can-buoy of the second-class (No. 3) in eight fathoms; but there is no buoy on the western end, though one has been recommended. To avoid it, when entering the Middle Channel, give the buoy on the eastern end a berth to the eastward of three-quarters of a mile; or if beating in and standing to the eastward towards the ledge, go about as soon as Marshall's Point Light-house opens to the eastward of Hart's Island. There is *a shoal with fourteen feet* a quarter of a mile W. by N. ¼ N. from the western end of the Old Cilley; but the above directions avoid this also. ***Old Cilley Ledge.***

Carey's Rock lies on the western side of the passage, five-eighths of a mile N. by E. from the north-eastern point of Burnt Island, and about four hundred yards S. from the Shag Ledges. It is dry at half-tide, has from four to five fathoms all around it, but is not buoyed. The channel between it and the Old Cilley is nearly a mile and a quarter wide, with from seven to twelve fathoms. ***Carey's Rock.***

Shag Ledges are two bare rocky islets, three-quarters of a mile to the northward of Burnt Island and the same distance to the eastward of Davis' Island. They lie nearly NE. and SW. from each other, about a hundred and fifty yards apart; but there is no passage between them, nor is it advisable to pass to the westward of them except in a vessel of very light draught. The northeasternmost ledge is quite bold-to on its eastern side,—eight fathoms being found within one hundred yards of it. ***Shag Ledges.***

When past the Shag Ledges, if standing to the westward on a wind, look out for Gig Rock, a small pinnacle rock, with five feet at mean low water and deep water all around it, and not buoyed. From Marshall's Point Light-house it bears SW. by W. ½ W., nearly two miles distant, and from the northern point of Davis' Island E. by N. ¼ N., five-eighths of a mile distant. The course passes well to the eastward of it. ***Gig Rock.***

When past Gig Rock a red spar-buoy will be seen about three-quarters of a mile off, and bearing a little to the eastward of N. This is on The Sisters, a group of three rocks, lying NW. and SE., at a distance of a mile and three-quarters in a N. by E. ¼ E. direction from the northeastern point of Burnt Island and three-quarters of a mile W. by N. from Hart's Island. From Marshall's Point Light-house they bear SW. by W. ¾ W., distant a mile and a quarter. Two of them are awash at low water, and the third, which is the westernmost, has three feet at mean low water, and is marked by a spar-buoy (No. 2) painted red, and placed in twenty-four feet on its northwestern side. There is a channel with nine fathoms to the eastward of The Sisters, but it is not a safe passage on account of the dangerous shoals to the westward of Hart's Island, and which are called *Hart's Island Ledges*. They extend from the island due W. for nearly three-eighths of a mile,—some of them being awash at low water, some having five feet upon them, and others from fourteen to eighteen feet; and in southerly weather they break with great violence. ***The Sisters.***

When up with the buoy on The Sisters look out for Old Horse Ledge, which is on the western side of the channel, six hundred and fifty yards NW. ¼ N. from that buoy, with a channel between them in which from eleven to seventeen fathoms is found. This ledge has two feet at mean low water, is bare at low spring tides, and bears from Marshall's Point Light-house W. by S., one mile and three-eighths distant. An iron spindle, painted black, with cage on top, is placed on the summit of the rock. ***Old Horse Ledge.***

Nearly six hundred yards **W NW.** from Old Horse Ledge is a dry rock known as Outer Shag Ledge, but it is not in the way of vessels using this channel. It lies **E. ⅛ S.** from the southern end of Barter's Island, distant half a mile; **NW.** by **W. ¼ W.** from Old Horse Ledge, one-third of a mile; and **NW. ½ W.** from the buoy on The Sisters, distant five-eighths of a mile. Inner Shag Ledge, also dry at low water, lies a quarter of a mile **NW.** from the Outer Shag and two hundred yards from the eastern shore of Barter's Island. There is a good channel, with from six to ten fathoms between the two ledges, but unfit for strangers except at low water.

Outer and Inner Shag Ledges.

When past Old Horse Ledge there are no dangers until you are up with the southern end of Hooper's Island, when it is necessary to look out for Hooper's Island Rocks, which lie **W SW.** from the southern end of the island, from three hundred yards to a quarter of a mile from shore. The outer ledge is a detached rock with five and a half feet at low water, and lies a quarter of a mile from the island; while the inner rock has sixteen feet, and lies three hundred yards from shore, with a six fathom channel between it and Hooper's Island. Both ledges are covered with kelp, which shows itself at low water. A black spar-buoy (No. 3) has been placed off the southeastern side of the westernmost ledge, in three fathoms at low water.

Hooper's Island Rocks.

When past Hooper's Island Rocks the next danger met with is also on the eastern side of the channel, and consists of two rocks, known as the Kelp Ledges. They lie **N.** and **S.** from each other, off the western shore of Hooper's Island, with deep water between them and the island, which channel is not, however, practicable. The southern ledge extends **NE.** and **SW.**, is awash at its northern end, and has two feet in the middle and six feet at its southwestern end, which is a quarter of a mile from the Hooper's Island shore. The northern rock is a small detached ledge with twelve feet, lies nearly **N.** from the western end of the southern rock, three hundred and fifty yards distant, and the same distance to the westward of the western point of Hooper's Island. Neither ledge is buoyed; but a buoy has been recommended to be placed in deep water well clear of the western end of the southern ledge.

Kelp Ledges.

Above the Kelp Ledges, and between Teal Island and Hooper's Island, the channel is clear from shore to shore; but when up with the Little Caldwell Islands look out, on the eastern side of the channel, for Murray's Ledge, a detached rock, with seventeen feet at low water, which lies three hundred and fifty yards **E.** from the eastern end of the Little Caldwell Islands. There is deep water—that is, from five to ten fathoms—all around it, but the sailing-lines of this channel pass to the westward of it and close to the Little Caldwell Islands. It is not buoyed.

Murray's Ledge.

When up with Murray's Ledge a spar-buoy, painted red and black in horizontal stripes, will appear about a quarter of a mile off, bearing about **NE.** This is on Channel Rock, a common obstruction to this and the Herring Gut channel. It is a detached rock with nine feet at mean low water, which lies a little over five hundred yards to the westward of Hooper's Point and a quarter of a mile to the northeastward of Murray's Ledge. The buoy is placed near the middle of the ledge and may be passed on either hand; but vessels using this channel are accustomed to pass well to the westward of it.

Channel Rock.

From Channel Rock to Howard's Point there are no dangers, and above Howard's Point the dangers and sailing directions for St. George's River are given on pages 307–309.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING ST. GEORGE'S RIVER.

III. ***From the Eastward, by the Middle Channel.***—On the course from White Head bring Marshall's Point Light-house to bear **N. ¼ W.**, distant three miles, in thirty-two fathoms, "brown mud," and steer **NW. ¼ W.** towards the northern end of Thompson's Island, carrying not less than seven fathoms, until Marshall's Point Light-house opens to the northward of Hart's Island and bears **NE. ¼ N.**, nearly two miles distant. The depth will be fifteen fathoms, and the course thence is **N.** for Teal Island, carrying not less than eight fathoms, until Marshall's Point Light-house is shut in behind the southern end of Hooper's Island. If the light is visible over the point, bring it to bear **E. ¼ S.**; and if not, bring the southern point of Hooper's Island to bear **E. ⅛ S.**, with ten fathoms water, soft bottom, and steer **NE.** by **N. ⅛ N.**, which course will lead, with not less than five fathoms, up to Howard's Point. When abreast of this point, with the northern end of Caldwell's Island bearing **W. ⅛ S.** and the northeastern end of Gay Island **N NW.**, steer **N. ¼ W.** until past Howard's Point and the northeastern end of Gay Island bears **NW. ¼ N.**, when follow directions given for the river on pages 308–309.

The above courses pass one-third of a mile to the southwestward of the western end of Old Cilley Ledge; one-quarter of a mile to the southwestward of the fourteen feet spot west of the Old Cilley;



View of Approaches to St. George River from Muscongus Bay, Franklin Island Light bearing N.E. by E. distant 4 Miles

three-eighths of a mile to the northeastward of Carey's Rock; nearly six hundred yards to the eastward of the Shag Ledges; two hundred yards to the westward of The Sisters; three hundred yards to the eastward of Old Horse Ledge; three-eighths of a mile to the westward of Hooper's Island Rocks; the same distance to the eastward of the Outer Shag; three hundred yards to the westward of the Kelp Ledges; one hundred yards to the eastward of the Little Caldwell Islands; one hundred and seventy-five yards to the westward of Murray's Ledge; and three hundred and fifty yards to the westward of Channel Rock. *Sailing Directions--St. George's River.*

IV.—***Coming from the Westward, to enter by the Middle Channel.***—When, on the course for White Head, Monhegan Island Light-house bears **SW.** $\frac{3}{4}$ **S.**, five and three-eighths miles distant, and Marshall's Point Light-house **N.** by **E.** $\frac{5}{8}$ **E.**, seen just to the eastward of Hart's Island, the depth will be twenty-nine fathoms, "brown sand," and the course **N.**, carrying not less than eight fathoms until up with the southern end of Hooper's Island, in ten fathoms water. When this southern point bears **E.** $\frac{1}{2}$ **S.**, or Marshall's Point Light-house **E.** $\frac{1}{4}$ **S.**, steer **NE.** by **N.** $\frac{3}{4}$ **N.**, following the directions for the river.

The above courses pass six hundred yards to the eastward of Carey's Rock; one-third of a mile to the eastward of the Shag Ledges; one hundred and fifty yards to the westward of the red buoy on The Sisters; two hundred and fifty yards to the eastward of Old Horse Ledge; three-eighths of a mile to the westward of Hooper's Island Rocks; and the same distance to the eastward of the Outer Shag.

There is deep water between Burnt and Allen's islands, but the passage is obstructed by the dangerous *Dry Ledges*, which lie exactly in the middle. Deep water (that is, from six to fourteen fathoms) may, however, be taken along the western shore of Burnt Island through a channel about three hundred yards wide, and shelter may be found in **George's Harbor**, between Allen's and Davis' islands,—there being nothing in the way. Or, a vessel may enter St. George's River by this channel by steering towards the westernmost of the Shag Ledges as soon as she has passed the western end of Little Burnt Island. The Shag Ledges should receive a berth to the eastward of about two hundred yards, which will give a depth of seven fathoms; and the western end of Hooper's Island should be steered for until past the red buoy on The Sisters and the southern point of Teal Island bears **N.** Steer that course until Marshall's Point Light-house bears **E.** $\frac{1}{4}$ **S.**, and then steer **NE.** by **N.** $\frac{3}{4}$ **N.** up the river.

The least water found on the above sailing-lines is seven fathoms.

DANGERS

IN APPROACHING AND ENTERING ST. GEORGE'S RIVER.

IV.—***From the Westward, by the South Channel.***—This channel, as before mentioned, leads along the western shore of George's Islands and enters the river between Caldwell's Island on the east and Gay Island on the west. It is a third of a mile wide at its narrowest part, but has many dangerous ledges both on its eastern and western sides, and several lying nearly in the middle. Were the obstructions buoyed this would be the best channel into the river; and, as it is, strangers may, with due care, enter it in the day-time. Buoys have been recommended to be placed upon the various obstructions in this channel, which, when done, will render it perfectly safe.

In approaching the river by the South Channel from the southwestward the first danger met with is on the eastern side of the entrance, and is called Old Man Ledge. It is a very dangerous detached rock, dry two hours before low water, about one hundred feet long in a **N NE** and **S SW.** direction, and is distant nearly a mile **S.** $\frac{1}{2}$ **W.** from the southern end of Allen's Island. It is bold-to, with a good channel on all sides of it with not less than seven fathoms, and breaks violently at all times. A second-class iron can-buoy, painted black and marked No. 1, is placed in five fathoms about sixty yards **S SW.** from the ledge, and is to be left to the eastward by vessels using this passage. *Old Man Ledge.*

Half a mile **N.** $\frac{1}{2}$ **E.** from Old Man Ledge lies another, called Old Woman Ledge, which is for the most part bare at low water and a quarter of a mile long **NE.** by **N.** and **SW.** by **S.** Between it and the Old Man there is an unobstructed channel nearly half a mile wide with not less than seven fathoms, and on its northern side, between it and Allen's Island, a passage about one hundred and fifty yards wide with not less than five fathoms. The Old Woman breaks heavily at all times and is not buoyed, but the sailing-lines leave both it and the Old Man well to the eastward. *Old Woman Ledge.*

On the western side of the entrance, nearly opposite to the buoy on Old Man Ledge, is a bare rocky islet, two hundred and fifty yards long in a NE. and SW. direction, called Shark Island. There is deep water close to it on its eastern side, but dangerous ledges extend from it to the northward and northwestward for a quarter of a mile. These shoals, however, do not obstruct the South Channel.

Shark Island.

When past Shark Island look out for Little Egg Rock, also on the western side of the entrance. It is a bare rocky islet, bold-to on its eastern side, which lies W. by N. from the southern end of Allen's Island, seven-eighths of a mile distant; extends N. by E. and S. by W., and is one hundred and seventy-five yards long. It must not be approached on its southwestern side nearer than three-eighths of a mile, as there are sunken ledges with twelve feet at low water extending in that direction for a third of a mile, which are not buoyed. They are generally known as *Little Egg Rock Shoals.*

Little Egg Rock.

The channel between Little Egg Rock and Allen's Island is three-quarters of a mile wide, with from thirteen to twenty-two fathoms, and affords excellent beating-room, as the western shore of Allen's Island is bold-to,—six fathoms being found within an eighth of a mile of it. But on the western side of the channel, about two-thirds of a mile to the northward of Little Egg Rock, is the southernmost of a very dangerous group of ledges, called Seal Ledges, lying NE. by N. and SW. by S., and covering a space nearly three-quarters of a mile long, with deep and wide channels separating the different rocks. The northernmost of these ledges is a large rock, dry at low water, and surrounded by shoals, which lies N. by E. from Little Egg Rock, a little over one mile distant, and from Franklin Island Light-house SE. $\frac{3}{4}$ S., one mile and three-quarters distant. From the northern end of Benner's Island the dry part bears W. by S., distant a mile and a quarter, and NE. by N. from the southern ledge, distant seven hundred yards. This southern ledge, which has six feet at low water, lies nearly N NW. and S SE., is about four hundred yards long, and bears from Little Egg Rock N. $\frac{1}{2}$ W., distant two-thirds of a mile, and from the southwestern end of Allen's Island NW., one mile distant. A third rock, with thirteen feet at mean low water, lies about a third of a mile to the eastward of the southern ledge and three hundred and fifty yards to the southward of the northern ledge. A channel with eleven fathoms passes between this and the northern ledge, and another, with seven fathoms, and a quarter of a mile wide, leads between it and the southern ledge. About two hundred yards nearly N NE. from the dry part of the northern ledge is placed a red spar-buoy (No. 2) in four fathoms water, which is to be left to the westward by vessels passing through the South Channel, as it is colored and numbered for the use of vessels bound through Davis' Straits to the eastward.

Seal Ledges.

When past the red buoy No. 2 there is a clear channel until up with Thompson's Islands, when it is necessary to look out for Thompson's Island Rocks, three detached ledges, running off the western shore of the large Thompson's Island in a nearly W. by N. direction. The innermost, which is close to the shore, has six feet at low water; the middle one, which is three hundred and fifty yards to the westward, has five feet; and the outer and westernmost one, which lies a quarter of a mile W NW. from the middle rock, has eleven feet, and bears from the northwestern end of the largest of the Thompson's Islands SW. by W. $\frac{1}{4}$ W., five hundred and fifty yards distant. It is not buoyed, but a buoy has been recommended.

Thompson's Island Rocks.

On the western side of the channel, about three-quarters of a mile W. from the outermost of Thompson's Island Rocks, lie The Kegs, two round rocks, bare at low water, lying NE. and SW. from each other, about two hundred yards apart, and surrounded by shoal water. Between the lines of three fathoms they cover a space three-eighths of a mile long, and their southern ends bear from

The Kegs.

	Miles.
The buoy on Seal Ledges, N. $\frac{1}{2}$ E.	$\frac{3}{4}$
Southwestern end of Allen's Island, N. by W. a little over	2
Northern end of Thompson's Island, W SW.	$1\frac{1}{8}$
Franklin Island Light-house, E. by S. $\frac{1}{4}$ S.	$1\frac{1}{3}$

When Franklin Island Light-house bears W. $\frac{1}{4}$ N., you have passed the northern end of The Kegs. A buoy, painted black and marked No. 9, is placed in four fathoms on the eastern side of these ledges.

Above Thompson's Island the channel continues to the northward past Barter's, McGee's and Two-Bush islands; and when nearly up with the latter it is necessary to look out for *a small ledge, with seventeen feet at mean low water,* which lies nearly three-eighths of a mile NW. $\frac{3}{4}$ W. from the southwestern end of Two-Bush,—and this island should not, therefore, be approached nearer than eight hundred yards to avoid the ledge. When up with it, a red spar-buoy (No. 2) will be seen bearing about NE. by E., a third of a mile distant. This is on Jenks' Ledge, a dangerous ledge, common to all the channels from the westward, and which lies a little over a mile and a quarter N. by E. $\frac{1}{4}$ E. from the northwestern end of Thompson's Island and three-eighths of a mile N. by W. $\frac{1}{4}$ W. from the middle of Two-Bush Island. It is awash at low water, bare at low spring tides, and extends nearly NE. by E. for an eighth of a mile, with a good channel on both

Jenks' Ledge.

sides,—the main entrance, however, lying to the northward of it. The channel between this ledge and Two-Bush has from six to nine fathoms, but is not safe for strangers, owing to the dangerous ledges between Two-Bush and Eagle islands; while the main channel has from ten to eleven fathoms, is about five-eighths of a mile wide, and unobstructed.

Vessels beating up through this channel into St. George's River must, if standing to the northward towards Otter Island, from the vicinity of Jenks' Ledge, look out for Byer's Ship Ledge, which extends E. ½ S. from the northeastern end of that island six hundred and fifty yards, and is formed by a number of sunken ledges and bare rocks extending to the eastward from a rocky islet one hundred yards long, which lies two hundred and fifty yards from Otter Island. There is no buoy on it, but it lies two-thirds of a mile NW. by N. from Jenks' Ledge buoy. ***Byer's Ship Ledge.***

Otter Island is the first island to the westward of Gay Island in Muscongus Bay, and lies off the mouth of Meduncook River, at a distance of little over a mile. It extends NE. and SW., is seven-eighths of a mile long, forty feet high at its southern end, and well wooded except at its northern end, which is cleared, with a gentle slope, and has several houses upon it. Off its southeastern side there is a dangerous ledge, with eight feet at low water, about four hundred yards from shore, and called *Otter Island Ledge*. It is not buoyed, nor is it in the way of vessels using this passage. ***Otter Island.***

There is a good channel on either side of Otter Island leading into Meduncook River. That on the northern side, which passes between Otter and Cranberry islands, is called the **Otter Island Passage.**

When up with Jenks' Ledge, the channel turns to the eastward, leading between Gay and Caldwell's islands, but closer to the latter, and directly for the northern end of Howard's Point. On this course, when nearly up with Gay Island a spar-buoy, painted red and black in horizontal stripes, will be seen to the northeastward, about a third of a mile off. This is on Goose Rock Ledge, a detached rock, with eight feet at mean low water, which lies nearly in mid-channel between Gay and Caldwell's islands, and bears SE. by S. ¾ S. from the southwestern end of Gay Island, five hundred and fifty yards distant, and NE. ⅛ E. from Jenks' Ledge buoy, nearly a mile distant. The buoy is placed in seventeen feet about twenty yards to the southward of the rock, and is usually left to the northward. ***Goose Rock Ledge.***

There is a good passage on the northern side of Goose Rock Ledge with seven fathoms water, but the main passage is to the southward, between the ledge and Goose Rock, six hundred and fifty yards S. by E. ¼ E. from it. This is in reality two rocks, joined at low water, and surrounded by shoals. They are always out, and bear from Jenks' Ledge buoy E NE., three-quarters of a mile distant; S. by E. ½ E. from the southwestern end of Gay Island; and NW. ½ N. from Eagle Island, five-eighths of a mile distant. It is not safe to approach the dry rocks nearer than two hundred yards from any direction; but the channel between them and the buoy on Goose Rock Ledge is nearly a quarter of a mile wide, with from eleven to sixteen fathoms. ***Goose Rock.***

When past these ledges the channel leads along the northern shore of Caldwell's Island, giving Gay Island a wide berth to avoid Gay Cove Ledge, with six feet at mean low water, which lies in the middle of the channel, between Gay Cove and the northeastern end of Caldwell's Island. From the latter it bears NW. ¼ N., a quarter of a mile distant, and from Goose Rock Ledge NE. by E. ¾ E., distant three-quarters of a mile. There is good water on all sides of it,—from seven to ten fathoms being found between it and Gay Island; but it is usual to pass to the southward of it, and accordingly it is marked by a black spar-buoy (No. 1) placed in five fathoms off its southeastern end. When past it the channel is clear to Turkey Point; but vessels drawing over twelve feet should not approach the southeastern shore of Gay Island nearer than two hundred yards. ***Gay Cove Ledge.***

For dangers in the river above Turkey Point see pages 307–308.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING ST. GEORGE'S RIVER.

V. ***From the Westward, by the South Channel.***—On the course E. ½ N. from off Seguin, when Monhegan Light-house bears S. by E., distant two miles and three-quarters, the depth will be thirty-three fathoms, and the course for the entrance to the South Channel NE. by N. ¾ N., carrying not less than fourteen fathoms. Continue it until between Little Egg Rock and Allen's Island, in sixteen fathoms, with Franklin Island Light-house bearing NW. by N. ¾ N. and the middle of Little Egg Rock W. by N. ¼ N.,—the latter being about five hundred yards distant. Then steer N. by E. ¼ E., which will lead safely through the channel, with not less than ten fathoms, until up with Jenks' Ledge buoy. When abreast of this buoy, in ten fathoms, Franklin Island Light-house will bear SW. by W. ¼ W. and the northern extremity of Howard's Point E. by N. ¾ N. Now steer that course, carry-

Sailing Directions---St. George's River.

ing not less than nine and a half fathoms, until nearly up with the northern end of Caldwell's Island and abreast of the black buoy on Gay Cove Ledge, in eleven fathoms water, when steer **NE.** ½ **E.**, carrying not less than twelve fathoms, until past Pleasant Point and the southern extremity of Turkey Point bears **E.** by **S.** ¼ **S.** The depth will be twelve and a half fathoms, and the course thence is **NE.** ¾ **E.** through The Narrows; after which follow the directions for the river on pages 308–309.

The above courses pass one mile to the westward of the Old Man; a little over three-quarters of a mile to the eastward of Shark Island; three-quarters of a mile to the westward of Old Woman Ledge; a quarter of a mile to the eastward of Little Egg Rock; half a mile to the eastward of the southernmost of the Seal Ledges; four hundred yards to the eastward of the easternmost of the Seal Ledges, and three-eighths of a mile to the eastward of the red buoy on the northernmost; three hundred yards to the westward of the outermost of the Thompson's Island Rocks; nearly half a mile to the eastward of The Kegs; nearly three hundred yards to the westward of the seventeen feet rock northwest of Two-Bush Island; a quarter of a mile to the westward and three hundred yards to the northward of Jenks' Ledge; two hundred yards to the southward of Goose Rock Ledge; two hundred and fifty yards to the northward of Goose Rock; and an eighth of a mile to the southward of Gay Cove Ledge.

DANGERS

IN APPROACHING AND ENTERING ST. GEORGE'S RIVER.

V. ***From the Westward, by the Old Hump Channel.***—This passage, already mentioned, (see page 302,) has its entrance between Shark Island on the east and Eastern Egg Rock on the west; runs in a **NE.** by **N.** direction, leaving Shark Island, the Seal Ledges, the Old Hump and The Kegs to the eastward, and Eastern Egg Rock and the Franklin Island Shoals to the westward, and joins the Western Passage off Otter Island. It is about seven-eighths of a mile wide at its entrance, and in its narrowest part (which is abreast of the Old Hump) is six hundred yards in width. When nearly up with Shark Island, Eastern Egg Rock will be seen as a low, nearly flat, bare, rocky islet, extending nearly **N NE.** and **S SW.**, and about three hundred and fifty yards long. Neither north nor south of it is there any passage suitable for strangers, as on the northern side extends the very dangerous Franklin Island Shoals, a mile and three-quarters to Franklin Island; while on the southern side, four hundred yards **S.** by **W.** ½ **W.** from the rock, is a detached ledge with eight feet at low water, called *Egg Rock South Ledge*. Five and three-quarter fathoms may be taken between this ledge and Eastern Egg Rock, but the channel is not safe for strangers, as the ledge is not buoyed.

Eastern Egg Rock.

On the eastern side of the entrance Shark Island should receive a berth to the eastward of not less than one-third of a mile to avoid Shark Island Shoals, which extend in a northwesterly direction a quarter of a mile from the rock, and are bare at one-quarter ebb. **Shark Island**, as before described, (see page 314,) is a low, bare, rocky islet, about two hundred and fifty yards long **NE.** and **SW.**, lying between the South and Old Hump channels, marking the western point of entrance to the former and the eastern point of the latter, and bears from Franklin Island Light-house **S.**, nearly three miles distant. From Eastern Egg Rock it is distant a mile and a quarter **SE.** by **S.**, and from the Old Hump two miles **S.** by **W.** ¼ **W.**

Shark Island Shoals.

Andrews' Ledges are the next dangers met with in this channel, and lie on its eastern side, three-quarters of a mile to the northward of Shark Island and half a mile **SE.** ¾ **E.** from Eastern Egg Rock. They are two small detached rocks, lying **NW.** by **N.** and **SE.** by **S.** from each other, about one hundred and seventy-five yards apart, and are not marked in any way. The northwestern rock bears **N.** ½ **W.** from Shark Island, distant three-quarters of a mile, and has five feet at mean low water, while the southern rock is awash. The space inclosed between Little Egg Rock, Shark Island, and Andrews' Ledges has many shoal places and is not safe for strangers, although it is traversed by deep channels.

Andrews' Ledges.

When past Andrews' Ledges, if beating to the windward, do not stand farther to the eastward than to bring the Old Hump to bear **N.** ½ **W.**, or Franklin Island Light-house **N.** by **W.** ¾ **W.**, to avoid the Seal Ledges, the westernmost of which extends into this channel. This southwestern ledge, which has six feet at low water, lies nearly **N NW.** and **S SE.**, is about four hundred yards long, and bears from

Seal Ledges.

	Miles.
Shark Island, NE. by N. ¼ N.	1¼
Eastern Egg Rock, E.	1⅛
Old Hump, S. by E. ¾ E.	⅝
Franklin Island Light-house, S SE.	2

Six fathoms may be taken between this ledge and the northeastern ledge through a channel a quarter of a mile wide, but strangers must not attempt it. There is also an excellent passage, five-eighths of a mile wide, between the Seal Ledges and the Old Hump, which is used by vessels intending to pass through Davis' Straits. About two hundred yards **N NE.** from the dry part of the northern ledge is placed a red spar-buoy (No. 2), which is to be left to the eastward by vessels using this channel. Ten fathoms may be taken through it by keeping rather nearer to the Seal Ledges than the Old Hump. ***Dangers---St. George's River.***

On the western side of the channel, about three hundred yards to the northward of Eastern Egg Rock, there will be seen a black spar-buoy. This is on Egg Rock North Ledge, which is awash at low water, and bears from Eastern Egg Rock **NE.** by **N.** $\frac{3}{4}$ **N.**; from Shark Island **NW.** by **N.** $\frac{3}{4}$ **N.**, a mile and five-eighths distant; from the Old Hump **W.** by **S.** $\frac{3}{8}$ **S.**, a mile and a third distant; and from Franklin Island Light-house **SW.** by **S.** $\frac{3}{4}$ **S.**, nearly a mile and three-quarters distant. It is the southernmost of the Franklin Island Shoals, which occupy all the space between Franklin Island and the black buoy on this rock. The buoy is marked No. 7, and is placed in four fathoms on the southern end of the rock as a guide to vessels using the Davis' Straits passage. ***Egg Rock North Ledge.***

Franklin Island Shoals are the worst obstructions in either the Old Hump Channel or the Main Channel,—occupying a space nearly a mile and a half long by half a mile in width between Franklin Island and Eastern Egg Rock. They consist of a great number of detached rocks, some bare at low water, others with from one to seventeen feet upon them, and several bare at half-tide. The southernmost (Egg Rock North Ledge) has been already described, and is the only one which is buoyed; but in southerly weather most of the rocks show themselves by heavy breakers. ***Franklin Island Shoals.***

Next to the northward of Egg Rock North Ledge are the Midway Rocks, a group of five sunken ledges with from one to twelve feet at low water, and extending nearly **E.** and **W.** for three-quarters of a mile. The easternmost rock, which is the most dangerous to vessels using this channel, is awash at low water, and bears from Old Hump Ledge **W.** $\frac{1}{4}$ **S.**, about five-eighths of a mile distant, and from Franklin Island Light-house **S.** $\frac{1}{4}$ **W.**, a mile and an eighth distant. It is three hundred and fifty yards long between the lines of three fathoms; extends **NE.** by **N.** and **SW.** by **S.**; and, to avoid it, vessels standing to the westward on a wind should go about as soon as Franklin Island Light-house bears **N.** $\frac{1}{2}$ **W.**, or the eastern extremity of Otter Island **NE.** by **N.** $\frac{1}{4}$ **N.** About two hundred and fifty yards **NW.** by **W.** from this rock lies another with eleven feet at mean low water; and a quarter of a mile to the westward of this is the westernmost rock, which has twelve feet, and bears **SW.** by **S.** $\frac{1}{2}$ **S.** from Franklin Island Light-house, one mile distant. A quarter of a mile **S SW.** from it lies the southernmost ledge, with five feet at low water, which bears from Franklin Island Light-house **SW.** by **S.** $\frac{3}{4}$ **S.**, a mile and five-eighths distant, and from the black buoy on Egg Rock North Ledge **N.** $\frac{3}{4}$ **E.**, a quarter of a mile distant. ***Midway Rocks.***

When past Midway Rocks do not go to the westward of Otter Island bearing **NE.** by **N.** $\frac{1}{4}$ **N.**, (as before,) to avoid the shoal water between those rocks and Long Ledge.

A mass of shoal ground extends from Midway Rocks for half a mile to the northeastward, almost joining the southern extremity of Long Ledge; and to the northward for about the same distance towards Franklin Island. This shoal ground is traversed by numerous narrow channels with from three to ten fathoms water in them, but they are, of course, entirely unsafe and are never used. From ten to sixteen feet water is found upon the shoals.

Hough's Ledge and *Round Ledge* form the western boundaries of the Franklin Island Shoals, and Round Ledge marks their northern end; but neither ledge is in the way of vessels using this passage.

Old Hump Ledge, or **The Old Hump,** which gives the name to this channel, lies on the western side, nearly abreast of Midway Rocks, from which it is distant half a mile. It is a bare rock, about one hundred and fifty yards square, with long ledges, bare at low water, extending from it a quarter of a mile to the northeastward; and it bears from Franklin Island Light-house **SE.** by **S.** $\frac{1}{2}$ **S.**, nearly a mile and a quarter distant, and **N.** by **E.** $\frac{1}{4}$ **E.** from Shark Island, nearly two miles distant. Five fathoms may be carried to within one hundred and fifty yards of this rock on its western side, but in passing to the northward of it, it should receive a berth of not less than one-third of a mile. ***Old Hump Ledge.***

When abreast of Old Hump Ledge there will be seen, bearing about **N.** by **W.**, a line of bare rocky islets in range with Harbor Island and stretching along the western side of the channel. This is Long Ledge, dry at low water for three-eighths of a mile in length, and covering, between the lines of three fathoms, a space three-quarters of a mile long in a **NE.** by **N.** $\frac{1}{2}$ **N.** direction. Its southern end bears from Franklin Island Light-house **SE.** by **S.** $\frac{1}{2}$ **S.**, a little over half a mile, and from Old Hump Ledge **NW.** by **N.** $\frac{3}{4}$ **N.**, half a mile distant. Its northern end, which is awash at low water, bears from Franklin Island Light-house **E.** $\frac{1}{2}$ **N.**, five-eighths of a mile distant, and from Otter Island **SW.** by **S.**, a mile and five-eighths distant. There is no buoy on this or any other ledge in the Old Hump Channel except Egg Rock North Ledge and the Seal Ledges. ***Long Ledge.***

On the eastern side of the channel, a mile **NE.** from the Old Hump, and abreast of the northern end of Long Ledge, are The Kegs, already described on page 314 as two round rocks, bare at low water, and surrounded by shoals, lying between the South and Old Hump channels, and

The Kegs. bearing from Franklin Island Light-house **E.** ½ **S.**, one mile and a half distant. The shoal water surrounding them extends **NE.** and **SW.** for three-eighths of a mile, and is marked by a black spar-buoy (No. 9) placed in four fathoms on their eastern end. The western end of the shoal bears from the Old Hump **NE.** ¼ **N.**, distant one mile, and from the northern end of Thompson's Island **W.** by **S.** ¼ **S.**, one mile and an eighth distant.

When up with The Kegs, Gangway Ledge will be seen bearing about **N NW.**, and distant five-eighths of a mile. This ledge is situated at the junction of the Old Hump Channel with the Western Passage, and about a quarter of a mile **NE.** ½ **E.** from the northern end of Long Ledge,

Gangway Ledge. with a channel of not less than five fathoms between them. It is a bare rock, surrounded by shoals, extends **NE.** and **SW.**, and bears from Franklin Island Light-house **E.** by **N.** ½ **N.**, nearly one mile distant, and from the southwestern end of Otter Island **SW.** by **S.** ½ **S.**, one mile and three-eighths distant. It is quite bold-to on its eastern side,—thirteen fathoms being found within one hundred and fifty yards.

When past Gangway Ledge the course leads more to the eastward, joining the South Channel abreast of Jenks' Ledge. On this course there are no dangers in the channel; but if standing to the northward on a wind, the southern end of Otter Island must not be approached nearer

Otter Island Ledge. than a quarter of a mile, to avoid *a shoal with twelve feet*, which extends from that point in a **S SW.** direction two hundred and fifty yards. About three-eighths of a mile to the eastward of this shoal lies Otter Island Ledge with eight feet at mean low water. It is four hundred yards from the southeastern shore of Otter Island, is not buoyed, and is not in the way unless a vessel is standing to the northward on a wind. The sailing-lines pass from three-eighths to half a mile to the southward of it.

Byer's Ship Ledge is a rocky islet about one hundred yards long, which lies an eighth of a mile to the southeastward of the northern end of Otter Island. From it a dangerous ledge,

Byer's Ship Ledge. for the most part bare at low water, extends in an **E SE.** direction nearly four hundred yards, and is not buoyed. Vessels standing to the northward in this vicinity should, in order to avoid this ledge, go about as soon as Franklin Island Light-house bears **SW.** ¾ **W.** or the western end of Gay Island **NE.** ¾ **E.**

On the southern side of the channel, when nearly up with Two-Bush Island, look out for *a small ledge with seventeen feet at mean low water*, which lies nearly three-eighths of a mile **NW.** ¾ **W.** from the southwestern end of Two-Bush, which island should not, therefore, be approached nearer than eight hundred yards to avoid the ledge. When up with it, a red spar-buoy (No. 2) will be seen bearing about

Jenks' Ledge. **NE.** by **E.**, a third of a mile distant. This is on Jenks' Ledge, a dangerous ledge, common to all the channels from the westward, and which lies a little over a mile and a quarter **N.** by **E.** ¼ **E.** from the northwestern end of Thompson's Island and three-eighths of a mile **N.** by **W.** ¼ **W.** from the middle of Two-Bush Island. It is awash at low water, bare at low spring tides, and extends nearly **NE.** by **E.** for an eighth of a mile, with a good channel on all sides. Vessels using this passage, however, pass first to the westward and then to the northward of it.

Both Jenks' Ledge and the seventeen feet ledge are in the South Channel, the dangers in which have already been described on pages 314–315.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING ST. GEORGE'S RIVER.

VI. ***From the Westward, by the Old Hump Channel.***—On the **E.** ¼ **N.** course from off Seguin, bring Pemaquid Light-house to bear **NW.** ¼ **W.**, five miles and three-quarters distant; when the depth will be thirty-nine fathoms, and the course **NE.** by **N.** ¼ **N.** for about eight miles, which leads safely through the channel with not less than seven fathoms, and up with Gangway Ledge. When past the ledge, in eleven fathoms water, with Franklin Island Light-house bearing **W.** by **S.** ½ **S.**, steer **NE.**, carrying not less than eleven fathoms, until the southwestern end of Otter Island bears **W.** ½ **N.** Nearly, Two-Bush Island **SE.** ¾ **S.**, and the buoy on Jenks' Ledge is nearly abeam. At this point is the junction of this and the South Channel with the Western Passage, and the course is **E.** by **N.** ¾ **N.**, with not less than nine fathoms, nearly for the northern end of Howard's Point. On this course, when nearly up with the northern end of Caldwell's Island and abreast of the black buoy on Gay Cove Ledge, in eleven fathoms water, steer **NE.** ½ **E.**, carrying not less than twelve fathoms, until past Pleasant Point and the southern extremity of Turkey Point bears **E.** by **S.** ¼ **S.** The depth will be twelve and a half fathoms, and the course thence is **NE.** ¾ **E.** through The Narrows, following the directions for the river on page 309.

The above courses pass five-eighths of a mile to the westward of Shark Island Shoals; half a mile to the eastward of Egg Rock South Ledge; three-eighths of a mile to the westward of Andrews' Ledges; nearly half a mile to the eastward of Eastern Egg Rock and Egg Rock North Ledge; five-eighths of a mile to the eastward of the southernmost of the Midway Rocks; three-quarters of a mile to the westward of the Seal Ledges; a quarter of a mile to the eastward of the easternmost of the Midway Rocks; about three hundred and fifty yards to the westward of Old Hump Ledge; five hundred and fifty yards to the eastward of Long Ledge; half a mile to the westward of The Kegs; two hundred and fifty yards to the eastward of Gangway Ledge; about seven hundred yards to the northward of the seventeen feet shoal off Two-Bush Island; three-eighths of a mile to the eastward of Otter Island Ledge; a quarter of a mile to the westward, and then four hundred yards to the northward, of Jenks' Ledge buoy; half a mile to the southward of Byer's Ship Ledge; two hundred and fifty yards to the northward of Goose Rock; an eighth of a mile to the southward of Goose Rock Ledge; and the same distance to the southward of Gay Cove Ledge.

Sailing Directions---St. George's River.

DANGERS

IN APPROACHING AND ENTERING ST. GEORGE'S RIVER.

VI. ***From the Westward, by the Western Passage.***—This, which is the most commonly used of all the channels into St. George's River, enters from Muscongus Bay, between Crane Island on the north and Franklin Island on the south, and is eight hundred yards wide, with a depth of not less than ten fathoms as far up as Jenks' Ledge, where it joins the South and Old Hump channels. A description of its approaches comprises also a brief mention of the islands in Muscongus Bay, which lie on its eastern and western sides, and these will be given first in order.

Crane Island, on the northern side of the entrance, is low, nearly flat and rocky, and has one or two trees upon it. It lies **NE.** and **SW.**, is about a quarter of a mile long, and is separated from Harbor Island (which lies to the northeastward of it) by a narrow channel with about twelve feet at low water.

Crane Island.

Franklin Island, on the southern side, is low and rocky, with a few stunted fir trees upon it. It extends **N NE.** and **S SW.**, and has a light-house upon its western shore, near the northern end. This light-house, which is the guide to St. George's and Meduncook rivers, is called Franklin Island Light-house, and is a white tower, thirty-five feet high, showing a fixed white light, varied by flashes every minute and a half, from a height of fifty-four feet above the sea. This light is of the fourth order of Fresnel, visible twelve miles, and is in

Franklin Island and Light-house

Latitude ..... **43° 53′ 31″ N.**
Longitude ..... **69° 22′ 30″ W.**

The tower is connected by a brick work-room with the keeper's dwelling, which is painted white.

On the northern side of the channel, and just to the northeastward of Crane Island, lies Harbor Island, a low rocky island, three-quarters of a mile long in a **N.** by **E.** and **S.** by **W.** direction. On its western side there is a somewhat remarkable hillock, about sixty feet high, with a wooded summit, and on the southern end there is a grove of spruce; but the rest of the island is bare of trees and thinly covered with grass. On its eastern side lies Hall's Island, also low, and with a grove of trees at its northern end. There is no passage between it and Harbor Island,—the two being connected at low water by bare ledges.

Harbor and Hall's Islands.

When past Franklin Island, the channel turns to the eastward and passes about midway between George's Islands and Otter Island, which lies off the mouth of the Meduncook River, in a **NE.** and **SW.** direction, and is about seven-eighths of a mile long. It is forty feet high at its southern end, and well wooded except at its northern end, which is cleared, with a gentle slope, and has several houses upon it.

Otter Island.

The first danger met with in approaching St. George's River by the Western Passage, after passing Pemaquid Point, (the western point of entrance to Muscongus Bay,) is called New Harbor Sunken Ledges, and is marked by a black nun-buoy of the first class. It is a group composed of three ledges, lying about **N NE.** and **S SW.** from each other, and separated by narrow and crooked channels. The northernmost rock, which has nine feet at low water, bears from Pemaquid Light-house **E.** by **N.** $\frac{1}{2}$ **N.**, a little over three miles distant, and from Franklin Island Light-house **W.** by **S.** $\frac{1}{4}$ **S.**, three and a half miles distant. The middle one lies two hundred and seventy-five yards **S SW.** from this, with eleven feet water, and bears from Pemaquid Light-house **E.** by **N.** $\frac{1}{4}$ **N.**, distant nearly three miles, and from Franklin Island Light-house **W.** by **S.** $\frac{1}{2}$ **S.**, distant three miles and five-eighths. The southern rock, which has fifteen feet at low water, lies seventy-five yards **S.** by **W.** $\frac{1}{2}$ **W.** from the middle one, and bears from Pemaquid Light-house **E.** by **N.** $\frac{1}{8}$ **N.**, two miles and seven-eighths distant, and from Franklin Island Light-house **W.** by **S.** $\frac{3}{4}$ **S.**,

New Harbor Sunken Ledges.

three miles and three-quarters distant. Besides these, there is a small rock, bare at low water, which lies to the northeastward of the buoy, about two hundred yards distant. The buoy is placed in three fathoms on the southeastern end of the ledge, is marked No. 1, and is to be left to the northward.

When up with this black buoy Eastern Egg Rock will be seen, bearing nearly **E.**, and about two miles off. It is a low, nearly flat, bare, rocky islet, extending nearly **N NE.** and **S SW.**, and about three hundred and fifty yards long. A wooden tripod, fifty-four feet high,—the upper half covered in and painted white,—is erected on the extreme northern end of this rock, and serves to distinguish the obstruction. Neither north nor south of the rock is there any passage suitable for strangers; as on the northern side extend the very dangerous Franklin Island Shoals, a mile and three-quarters to Franklin Island; while on the southern side, four hundred yards **S.** by **W.** ½ **W.** from the rock, is a detached ledge, with eight feet at low water, called *Egg Rock South Ledge.* Five and three-quarter fathoms may be taken between this ledge and Eastern Egg Rock, but the channel is not safe for strangers, as the ledge is not buoyed. Eastern Egg Rock bears from the black buoy on New Harbor Sunken Ledges **E.** by **S.**, two miles and three-quarters distant, and from Franklin Island Light-house **SW.** by **S.** ¾ **S.**, two miles distant.

Eastern Egg Rock.

About three hundred yards to the northward of Eastern Egg Rock will be seen a black spar-buoy. This is on Egg Rock North Ledge, the southernmost of the Franklin Island Shoals. It is awash at low water, and bears from Eastern Egg Rock **NE.** by **N.** ¾ **N.**, three hundred yards distant, and from Franklin Island Light-house **SW.** by **S.** ¾ **S.**, nearly a mile and three-quarters distant. The buoy is marked No. 7, and is placed in four fathoms on the southern end of the rock as a guide to vessels using the Davis' Straits Passage; but by those using this channel is left well to the eastward.

Egg Rock North Ledge.

On the northern side of the channel, nearly opposite to Eastern Egg Rock, lies a bare rocky islet, called Western Egg Rock. It lies **NE.** and **SW.**, is two hundred and fifty yards long, and bears from Franklin Island Light-house **W.** by **S.**, two miles distant. It is surrounded by shoals, and must not be closely approached, especially on its northeastern side, as there is a very dangerous rock, known as *Western Egg Rock Ledge,* over five hundred yards **E.** ½ **N.** from it. This ledge breaks heavily at all times, and is not buoyed. It is bare at low water, and bears from Franklin Island Light-house **W.** by **S.** ¼ **S.**, a mile and five-eighths distant. A buoy has been recommended to be placed on its eastern end.

Western Egg Rock.

On the eastern side of the channel, next to the northward of Egg Rock North Ledge, lie the Midway Rocks, already described on page 317 as forming part of *Franklin Island Shoals.* Only the northernmost and southernmost rocks obstruct this channel, and they are very rarely approached except by vessels beating in or out, as the sailing-lines pass three-quarters of a mile to the northward of them. The southernmost ledge, which is first met with, has five feet at low water, bears from Franklin Island Light-house **SW.** by **S.** ¾ **S.**, a mile and three-eighths distant, and from the black buoy on Egg Rock North Ledge **N.** ¾ **E.**, a quarter of a mile distant. About five hundred yards **N NE.** from this rock lies the northernmost rock, with twelve feet water. It bears **SW.** by **S.** ½ **S.** from Franklin Island Light-house, one mile distant.

Midway Rocks.

About four hundred yards **NE.** ½ **N.** from the northernmost rock lies Hough's Ledge, which is also one of the Franklin Island Shoals. This ledge is about seven hundred yards long between the lines of three fathoms, lies **NE.** by **N.** and **SW.** by **S.**, and its northern end is distant from Round Ledge three hundred yards and from Franklin Island Light-house nearly half a mile. This northern end has nine feet at low water, while the middle of the ledge has eight feet; and the southern end is bare at low water, and is three-quarters of a mile **S SW.** from Franklin Island.

Hough's Ledge.

Next to the northeastward of Hough's Ledge lies the northernmost of the Franklin Island Shoals, called Round Ledge. It is a bare rocky islet, sixty yards in diameter, surrounded by shoal water, and bears from Franklin Island Light-house **S.** by **W.** ½ **W.**, nearly half a mile distant, with a channel between the ledge and the island through which twelve fathoms may be carried. After passing Franklin Island there are no dangers in the channel; but vessels standing to the southward on a wind must look out, on the southern side of the passage, for Long Ledge and Gangway Ledge.

Round Ledge.

Long Ledge is a line of bare rocks, surrounded by shoals, extending **NE.** by **N.** ½ **N.**, and covering, between the lines of three fathoms, a space three-quarters of a mile long. Its northern end (the only part which obstructs this channel) is awash at low water, and bears from Franklin Island Light-house **E.** ¾ **N.**, five-eighths of a mile distant, and from Otter Island **SW.** by **S.**, a mile and five-eighths distant. It is not buoyed.

Long Ledge.

About five hundred yards **NE.** ½ **E.** from it lies Gangway Ledge, at the junction of this passage with the Old Hump Channel. It is a bare rock, surrounded by shoals, extends **NE.** and **SW.**, and bears from Franklin Island Light-house **E.** by **N.** ½ **N.**, nearly one mile distant, and from the southwestern end of Otter Island **SW.** by **S.** ½ **S.**, one mile and three-eighths distant. When past this ledge the course leads more to the eastward, joining the South Channel abreast of Jenks' Ledge.

Gangway Ledge.

On this course there are no dangers in the channel; but if standing to the northward on a wind, the southern end of Otter Island must not be approached nearer than a quarter of a mile to avoid *a shoal with twelve feet*, which extends from that point in a **S SW.** direction two hundred and fifty yards. About three-eighths of a mile to the eastward of this shoal lies Otter Island Ledge, with eight feet at mean low water. It is four hundred yards from the southeastern shore of Otter island, is not buoyed, and is not in the way unless a vessel is standing to the northward on a wind. The sailing-lines pass from three-eighths to half a mile to the southward of it. ***Otter Island Ledge.***

Byer's Ship Ledge is a rocky islet, about one hundred yards long, which lies an eighth of a mile to the southeastward of the northern end of Otter Island. From it a dangerous ledge, for the most part bare at low water, extends in an **E SE.** direction nearly four hundred yards, and is not buoyed. Vessels standing to the northward in this vicinity should, in order to avoid this ledge, go about as soon as Franklin Island Light-house bears **SW. ¾ W.**, or the western end of Gay Island **NE. ¾ E.** ***Byer's Ship Ledge.***

On the southern side of the channel, and nearly opposite to Byer's Ship Ledge, will be seen a red spar-buoy (No. 2). This is on Jenks' Ledge, a dangerous ledge, common to all the channels from the westward, and which lies a little over a mile and a quarter **N.** by **E. ¼ E.** from the northwestern end of Thompson's Island and three-eighths of a mile **N.** by **W. ¼ W.** from the middle of Two-Bush Island. It is awash at low water, bare at low spring tides, and extends nearly **NE.** by **E.** for one-eighth of a mile, with a good channel on all sides of it. Vessels using this passage, however, pass first to the westward and then to the northward of it. ***Jenks' Ledge.***

Jenks' Ledge is in the South Channel, the dangers in which have been already described. (See pages 314–315.)

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING ST. GEORGE'S RIVER.

VII. ***From the Westward, by the Western Passage.***—When, on the **E. ½ N.** course from off Seguin, Pemaquid Light-house bears **NE.** by **N. ½ N.**, four miles and three-quarters distant, the depth will be thirty fathoms, and the course **NE. ¾ E.** for eleven miles, carrying not less than ten fathoms, until Franklin Island Light-house bears **SW.** by **S. ½ S.**, with twenty-eight fathoms, soft bottom. Then steer **NE.** by **E. ⅝ E.** until nearly up with the red buoy on Jenks' Ledge,—the southwestern end of Otter Island bearing **W. ½ N.**, distant five-eighths of a mile, and Two-Bush Island **SE. ½ E.**, distant three-quarters of a mile. This is the point of junction of the South and Old Hump channels with the Western Passage, when steer **E.** by **N. ¾ N.**, carrying not less than ten fathoms, until nearly up with the northeastern end of Caldwell's Island and abreast of the black buoy on Gay Cove Ledge, with eleven fathoms water. Now steer **NE. ¼ E.**, carrying not less than twelve fathoms, until past Pleasant Point and the southern extremity of Turkey Point bears **E.** by **S. ¼ S.** The depth will be twelve and a half fathoms, and the course thence is **NE. ¾ E.** through The Narrows; after which follow the directions for the river.

The above courses pass one mile to the southward of the black buoy on New Harbor Sunken Ledges; one mile and a quarter to the westward of Egg Rock South Ledge; one mile to the westward of Eastern Egg Rock; seven-eighths of a mile to the northward of Egg Rock North Ledge; three-quarters of a mile to the northward of the southernmost of the Midway Rocks; half a mile to the southward of Western Egg Rock Ledge; two-thirds of a mile to the northward of the northernmost of the Midway Rocks; a little over half a mile to the northward of the dry part of Hough's Ledge; half a mile to the northward of Round Ledge; half a mile to the northward of the northern end of Long Ledge; three-eighths of a mile to the northward of Gangway Ledge; three-eighths of a mile to the southward of Otter Island Ledge; half a mile to the southward of Byer's Ship Ledge; four hundred yards to the northward of Jenks' Ledge buoy; two hundred and fifty yards to the northward of Goose Rock; an eighth of a mile to the southward of Goose Rock Ledge; and the same distance to the southward of Gay Cove Ledge.

DAVIS' STRAITS.

Vessels using this passage enter from the eastward, between Mosquito Island and The Brothers; pass to the northward of the Gunning Rocks, to the southward of Marshall's Point Light-house, between Hooper's and Hart's Islands; and then turning to the southwestward, across the Middle Channel, passing between Old Horse Ledge and The Sisters, and enter Davis' Straits. When through the Straits the course turns to the westward, crossing the South Channel, passing between Old Hump Ledge and the Seal Ledges, and then between Eastern Egg Rock and Egg Rock North Ledge, and joins the Western Passage off New Harbor Sunken Ledges, in Muscongus Bay. The whole distance from Mosquito Island is exactly ten miles.

DANGERS.

In coming from the eastward the first danger met with lies almost exactly in the middle of the channel, and is called Barter's Shoal. It is a small pinnacle rock, with fifteen feet at mean low water; lies six hundred yards off the southern shore of Mosquito Island and the same distance due E. from Hay Ledge. It is not buoyed, but is easily avoided by keeping either shore aboard. When past it there are no precautions necessary, except to keep off Hay Ledge and The Brothers until up with Mosquito Island Ledge, which lies on the northern side of the channel, and will be easily recognized by the black spar-buoy on its southern end. It has seven feet at mean low water, and bears from the southwestern end of Mosquito Island NW. by W. ½ W., three-quarters of a mile distant; from Marshall's Point Light-house E. ¾ S., nearly seven-eighths of a mile distant; and the course passes to the southward of it. The buoy is marked No. 9, and placed in eighteen feet water about twenty-five yards SE. from the shoal of the ledge.

Barter's Shoal.

Mosquito Island Ledge.

When up with the buoy on Mosquito Island Ledge look out, on the southern side of the channel, for the Gunning Rock Ledges, two detached shoals with four and five feet water,—the northernmost of which is a quarter of a mile NE. by N. from the northernmost of the Gunning Rocks. The other, which has five feet at low water, lies two hundred yards W SW. from the four-feet rock. There is deep water close to them, and they are not buoyed; but from the northern rock Marshall's Point Light-house bears NW. by W. ½ W., nearly three-quarters of a mile distant. At night by watching this bearing, and in daytime by not approaching the Gunning Rocks nearer than five hundred yards, these ledges may be avoided.

Gunning Rock Ledges.

When past Gunning Rock Ledges a black spar-buoy will be seen ahead, near Marshall's Point, and about half a mile off. This is on Marshall's Point Ledge, which extends two hundred and fifty yards S SE. from Marshall's Point, has eight feet at low water, and no passage inshore of it. The buoy is painted black, marked No. 7, is placed in three fathoms a little to the eastward of the ledge, and the course passes to the southward of it.

Marshall's Point Ledge.

When past Marshall's Point Ledge a red spar-buoy will be seen bearing about W. by N. ½ N., and three-eighths of a mile distant. This is on Allen's Ledge, at the northern end of Hart's Bar. Hart's Bar is a long shoal, composed of sand and gravel, which extends in a nearly N. direction from Hart's Island for about eight hundred yards, and for nearly the whole of that distance is dry at three-quarters ebb, and has several rocks, out at low water, scattered along its eastern edge. About an eighth of a mile beyond the northern end of the dry shoal lies Allen's Ledge, which has two feet at low water, and is in reality the northern end of the Bar. The buoy on Allen's Ledge is marked No. 4, and placed in three fathoms on its northern end. The course passes to the northward of it, between it and Hooper's Island.

Allen's Ledge and Hart's Bar.

When past the buoy on Allen's Ledge the next danger met with lies to the southwestward of Hooper's Island, and is called Hooper's Island Rocks. They lie W SW. from the southern end of the island, from three hundred yards to a quarter of a mile from shore. The outer ledge is a detached rock with five and a half feet at low water, and lies a quarter of a mile from the island, while the inner rock has sixteen feet, and lies three hundred yards from shore, with a six-fathom channel between it and Hooper's Island. The former is buoyed by a black spar-buoy (No. 3) placed in three fathoms on its southeastern side. Both ledges are covered with kelp, which shows itself at low water.

Hooper's Island Rocks.

When past Hooper's Island Rocks the course turns more to the southwestward, leading directly for the northeastern entrance to Davis' Straits; and about half a mile off in a SW. ½ W. direction there will be seen a red spar-buoy (No. 2). This is on The Sisters, before described, on page 311, as a group of three rocks lying NW. and SE., at a distance of a mile and three-quarters in a N. by E. ½ E. direction from the northeastern point of Burnt Island, and three-quarters of a mile W. by N. from Hart's Island. From Marshall's Point Light-house they bear SW. by W. ¾ W., distant one mile and a quarter. Two of them are awash at low water, and the third, which is the westernmost, has three feet at mean low water, and the buoy is placed in twenty-one feet on its northwestern side.

The Sisters.

When up with the buoy on The Sisters look out for Old Horse Ledge, which is on the northern side of the channel, six hundred and fifty yards NW. ½ N. from that buoy,—the channel passing between them with from eleven to seventeen fathoms. This ledge has two feet at mean low water; is bare at low spring tides; bears from Marshall's Point Light-house W. by S., one mile and three-eighths distant; and is marked by an iron spindle surmounted by a cage, which may be approached safely in moderate weather.

Old Horse Ledge.

When past the buoy on The Sisters the next danger met with lies on the southern side of the channel, five-eighths of a mile SW. by W. from that buoy. It is called Gig Rock, and is a small pinnacle rock, with five feet at mean low water and deep water all around it, and is not buoyed. From Marshall's Point Light-house it bears SW. by

Gig Rock.

W. ½ W., nearly two miles distant, and from the northern point of Davis' Island E. by N. ¼ N., five-eighths of a mile distant. The course passes well to the northward and westward of it.

On entering Davis' Straits a black spar-buoy will appear in mid-channel, off the northern end of Davis' Island. This is on Griffin's Ledge, a detached rock, with fourteen feet at mean low water and eleven at lowest tides, lying at the northeastern end of the Straits, with a channel on each side of it. That which passes to the eastward of it is, however, the widest and the one commonly used, and has four and three-quarter fathoms at low water. The buoy is marked No. 1, and is placed in four fathoms on the southeastern side of the ledge. Vessels of heavy draught must not attempt to pass to the westward of it, as the shoal water makes from Davis' Island nearly over to it on that side. *Griffin's Ledge.*

When through the Straits the course turns abruptly to the westward, crossing the South Channel; and soon a red spar-buoy will be seen about a mile off, and bearing about W. by S. This is on the northeastern end of the Seal Ledges, which lie between the South and Old Hump channels and form a very dangerous obstruction. They are a group of ledges lying NE. by N. and SW. by S., covering a space nearly three-quarters of a mile long, with deep and wide channels separating the different rocks. The northernmost is a large rock, dry at low water, and surrounded by shoals, which lies N. by E. from Little Egg Rock, a little over one mile distant, and from Franklin Island Light-house SE. ¾ S., one mile and three-quarters distant. From the northern end of Benner's Island the dry part bears W. by S., distant one mile and a quarter, and NE. by N. from the southern ledge, distant seven hundred yards. This southern ledge, which has six feet at low water, lies nearly N NW. and S SE.; is about four hundred yards long, and bears from Little Egg Rock N. ¼ W., distant two-thirds of a mile, and from the southwestern end of Allen's Island NW., one mile distant. About two hundred yards nearly N NE. from the dry part of the northern ledge is placed the buoy (No. 2) in four fathoms water, and is to be left to the southward by vessels using this passage. It may here be remarked that all of the buoys in this channel are colored and numbered as for vessels coming from the westward; and therefore those coming from the eastward must leave red buoys on the *port* hand and black buoys on the *starboard*. *Seal Ledges.*

When up with the buoy on the Seal Ledges, Old Hump Ledge will be seen, bearing about W. by N. ¾ N., and five-eighths of a mile distant. It is a bare rock, about one hundred and fifty yards square, and bears from Franklin Island Light-house SE. by S. ½ S., nearly a mile and a quarter distant, and N. by E. ¼ E. from Shark Island, nearly two miles. It should not be approached on its southern side nearer than two hundred yards, but the sailing-lines pass a quarter of a mile to the southward of it. *Old Hump Ledge.*

When past Old Hump Ledge look out for the black spar-buoy on Egg Rock North Ledge, awash at low water, bearing from *Egg Rock North Ledge.*

Eastern Egg Rock, NE. by N. ¾ N.	300 yards.
Shark Island, NW. by N. ¾ N.	1 ⅝ miles.
Old Hump, W. by S. ⅜ S.	1 ⅓ "
Franklin Island Light-house, SW. by S. ¾ S.	nearly 1 ¾ "

It is the southernmost of the *Franklin Island Shoals*, which occupy all the space between Franklin Island and the black buoy on this rock. The buoy is marked No. 7, and is placed in four fathoms on the southern end of the rock; and the course passes to the southward of it, between it and Eastern Egg Rock. On the northern end of this rocky islet is built a wooden tripod, the upper half of which is painted white; and this, together with the black buoy on Egg Rock North Ledge, serves to mark the limits of the passage. This is the narrowest part of the channel westward of Davis' Straits,—being less than three hundred yards in width. By not going to the northward of the range of the buoy on Egg Rock North Ledge and the Old Hump Ledge vessels may avoid the *Midway Rocks*.

After passing Egg Rock North Ledge there are no dangers in this channel; but if standing to the northward on a wind, it is necessary to look out for New Harbor Sunken Ledges, the black buoy on which lies two miles and three-quarters W. by N. from Eastern Egg Rock. These are three shoals lying about N NE. and S SW. from each other, and separated by narrow and crooked channels. The northeasternmost rock, which has nine feet at low water bears from Pemaquid Light-house E. by N. ½ N., a little over three miles distant, and from Franklin Island Light-house W. by S. ¼ S., three and a half miles distant. The middle one lies two hundred and seventy-five yards S SW. from this, with eleven feet water; bears from Pemaquid Light-house E. by N. ¼ N., distant nearly three miles, and from Franklin Island Light-house W. by S. ½ S., three miles and five-eighths distant. The southern rock, which has fifteen feet at low water, lies seventy-five yards S. by W. ½ W. from the middle one; bears from Pemaquid Light-house E. by N. ⅓ N., two miles and seven-eighths distant, and from Franklin Island Light-house W. by S. ⅜ S., three miles and three-quarters distant. Besides these there is a small rock, bare at low water, which lies to the northeastward of the buoy, about two hundred yards distant. The buoy is placed in three fathoms on the southern end of the ledge, is marked No. 1, and the course passes well to the southward of it. *New Harbor Sunken Ledges.*

SAILING DIRECTIONS.

On the course from White Head Light-house to the southwestward, bring Marshall's Point Light-house to bear **W NW.** and steer for it, passing between Mosquito Island on the north and Hay Ledge and The Brothers on the south, and carrying not less than six and three-quarter fathoms. On this course, when within five-eighths of a mile of the light-house, in nine and three-quarter fathoms, and the northernmost of the Gunning Rocks bears **SW.** by **S.** $\frac{3}{4}$ **S.**, (or is exactly abeam,) a quarter of a mile off, steer **W.** $\frac{1}{2}$ **N.** for a little over half a mile, which will lead past Marshall's Point Ledge with not less than six fathoms. When Marshall's Point Light-house bears **N.** $\frac{3}{4}$ **W.**, steer **W.** by **N.** $\frac{1}{2}$ **N.** for three-eighths of a mile, which leads up to the red buoy on Allen's Ledge with not less than four fathoms water. Pass to the northward of this buoy and steer **W.** by **S.** $\frac{3}{4}$ **S.**, carrying not less than eight fathoms, until the middle of Hart's Island bears **SE.** $\frac{1}{2}$ **S.** and the southwestern point of Hooper's Island **N.** The depth will be eight and a half fathoms, and the course thence **SW.** by **W.** $\frac{1}{2}$ **W.** across the Middle Channel of St. George's River, which course will lead, with not less than six and a half fathoms, to the entrance to Davis' Straits. When up with the buoy on Griffin's Ledge pass to the eastward of it, and steer **SW.** $\frac{3}{4}$ **W.** for about a quarter of a mile, until the western end of Otter Island opens to the westward of Thompson's Island on a bearing of **NW.** by **N.** $\frac{3}{4}$ **N.** This course leads through the Straits with not less than four fathoms and three-quarters. From the above bearing of the western end of Otter Island steer **W.** $\frac{3}{4}$ **S.**, carrying not less than eight fathoms, until up with the red buoy on the northeastern end of Seal Ledges. Pass to the northward of this and steer **W.** by **S.**, which course will lead, with not less than four fathoms, past Eastern Egg Rock and into Muscongus Bay. On this course, when Franklin Island Light-house bears **NE.** by **E.** and Pemaquid Light-house **W.** $\frac{1}{4}$ **N.**, with eighteen fathoms water, steer **SW.** $\frac{3}{4}$ **W.**, carrying not less than twenty fathoms, until Pemaquid Light-house bears **NE.** by **N.** $\frac{1}{4}$ **N.**, when the depth will be forty-one fathoms, and **W.** $\frac{3}{4}$ **S.** will lead safely past Seguin.

The above courses pass two hundred and seventy-five yards to the northward of Barter's Shoal; about a quarter of a mile to the northward of Hay Ledge; two hundred yards to the northward of The Brothers; four hundred yards to the southward of Mosquito Island Ledge; a little over a hundred yards to the northward of Gunning Rock Ledges; one hundred and fifty yards to the southward of Marshall's Point Ledge; about one hundred yards to the northward of the buoy on Allen's Ledge; one hundred and seventy-five yards to the westward of the buoy on The Sisters; a quarter of a mile to the southeastward of Old Horse Ledge; an eighth of a mile to the westward of Gig Rock; about fifty yards to the eastward of Griffin's Ledge buoy; one hundred and seventy-five yards to the northward of the red buoy on Seal Ledges; four hundred yards to the southward of the Old Hump; about fifty yards to the southward of the black buoy on Egg Rock North Ledge; and one mile to the southward of New Harbor Sunken Ledges.

Or, when up with the red buoy on Seal Ledges, **NE.** by **E.** $\frac{1}{2}$ **E.** will lead safely out, with not less than six fathoms, between Eastern Egg Rock and Shark Island, passing three-eighths of a mile to the northward of Andrews' Ledge and a quarter of a mile to the southward of Egg Rock South Ledge. This course continue until Pemaquid Light-house bears **NE.** by **N.** $\frac{1}{4}$ **N.**, with forty-one fathoms, when **W.** $\frac{3}{4}$ **S.** will lead safely past Seguin.

LIGHT-HOUSES.

Name.	Latitude.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		m. s.	Feet.	
Marshall's Point Light-house ..	43 55 2	69 15 41	4 37 2.7	Fixed.	.....	31	11
Franklin Island Light-house...	43 53 31	69 23 30	4 37 30.0	F. V. F.	1 30	54	12
Pemaquid Light-house	43 50 13	69 30 22	4 38 1.6	Fixed.	.....	75	14

TIDES.	Herring Gut.	Thomaston.
Corrected Establishment	10h 58m	11h 12m
Mean Rise and Fall of tides	9.3 ft.	9.4 ft.
Mean Rise and Fall of Spring tides	10.0 ft.	10.3 ft.
Mean Rise and Fall of Neap tides	8.5 ft.	8.6 ft.
Mean duration of Rise	6h 12m	6h 5m
Mean duration of Fall	6h 13m	6h 20m

CURRENTS.

No regular observations have as yet been made for the determination of the strength and direction of the tidal current in St. George's River and Muscongus Bay. Its strength varies with the direction of the wind, but a maximum velocity may be given, of a knot and a half for flood-tide, and two knots for ebb. With a northerly wind a strong current may be expected to set down the river on the ebb; with a southerly breeze the velocity of the flood will be increased. The tidal current of the river is strongest in The Narrows, owing to the sudden contraction of the passage at that place and to the depth of water in the channel. The ebb-tide especially, owing to the natural fall of the bed of the stream, runs here with considerable velocity. The tide sets directly up and down the channel, and therefore does not interfere with the courses of vessels in the river; but in approaching the entrance among the islands which surround it, it will be necessary in many cases to catch a head range in order to make the course good, as the current, both of flood and ebb, sets across the axes of the channels.

VARIATION OF THE COMPASS.

The magnetic variation for 1879, in the vicinity of St. George's River, is 14° 33′ W., with an approximate annual increase of 2′.

ICE IN ST. GEORGE'S RIVER.

In ordinary winters this river is considerably obstructed by local formations, which, however, continue but a short time. During severe winters, like that of 1874–5, however, it is apt to be closed to all navigation from the middle of January to the last of March—the solid ice extending as far down as Gay Island. In Herring Gut the upper portion of the harbor is obstructed, in severe winters, by a local formation, from about the middle of January to the middle of February; and, in 1875, on the fourth and fifth of March, the entire harbor and its approaches, as far as could be seen, were encumbered with an immense mass of drift-ice. This, while an absolute obstruction to sailing vessels, was only a hindrance to steamers, which vessels could get in and out of the harbor every day in winter. Sailing vessels could enter and find safe anchorage except on the fourth and fifth of March, when the extensive field of drift-ice prevented ingress or egress.

MUSCONGUS BAY.

This is the first bay to the westward of Penobscot Bay. Its entrance lies in

Latitude ..... 43° 50′ 0″ N.
Longitude ..... 69° 23′ 30″ W.,

and is embraced between Allen's Island on the east and Pemaquid Point on the west. Between these two points it is about eight and two-fifth miles wide. The eastern side of the bay is formed by George's Islands, and into its northeastern corner empties the St. George's River. To the westward of St. George's, and separated from it by Gay Island, is the entrance to Meduncook River, which empties into the bay on its northern side.

Meduncook River.

Meduncook River has a general course about NE. for two miles and a half. It is properly an arm of the bay, and not a river, and is at present of no commercial importance. Two islands—Friendship Long Island and Morse Island—lie between it and the entrance to Medomak River, the most important arm of the bay, which leads up to the town of Waldoboro'.

The small town of **Friendship** lies on the northern shore of Muscongus Bay, occupying the western side of a long and narrow cove which makes in to the westward of Meduncook. This cove has good anchorage, with from three to six fathoms water, soft bottom, and is called **Friendship Harbor.**

To the westward of Friendship Harbor is a wide cove called **Hatchet Cove,** nearly three-quarters of a mile wide at its entrance; but with an exceedingly narrow channel,—nearly two-thirds of its width being occupied by flats and ledges. These shoals make out from the eastern side, and the channel runs close along the western shore. Only fifteen feet can be carried into the anchorage, which is about three-quarters of a mile from the mouth of the cove.

Medomak River.

Next to the westward of Hatchet Cove is Medomak River, which empties into the northwestern part of Muscongus Bay. The entrance to this river is between Martin's Point (the western point of entrance to Hatchet Cove) on the east and Hog Island on the west. Between these two points the entrance is a little over two and a half miles wide. But in the middle of the mouth of the river lie two islands, called Cow Island and Bremen Long Island, which divide the entrance into an eastern and western channel. These channels have a general course NNE. to the northern end of Bremen Long Island, at which point they unite. Thence the general course is about NE. by N. for a little over two miles, then NW. for a mile and a half, and finally NE. by N. a mile and a half to **Waldoboro'.** Waldoboro' is a little over eight miles in a straight line from the mouth of Medomak River.

Greenland Cove.

In the extreme northwestern corner of Muscongus Bay is another cove or indentation called Greenland Cove, separated from Medomak River by a peninsula called **Hockomock.**

Muscongus Sound.

SW. from Hog Island lies a large island called **Muscongus Island.** It is two miles and a half long, and lies about NE. and SW.;—the two islands forming the eastern shores of Muscongus Sound. The entrance to this Sound is on the western side of the bay, between Pemaquid Neck on the west and the southern end of Muscongus Island on the east. It is seven-eighths of a mile wide, and the Sound runs about NE., very gradually narrowing to the mouth of Greenland Cove, a distance of a little over four and a quarter miles.

It is thus seen that Muscongus Bay is an irregularly shaped bay, making in a **NE.** direction to the westward of Penobscot Bay; that it is bounded on the east by the George's Islands and on the west by a peninsula of the mainland separating it from John's Bay and the Damariscotta River; and that two important rivers flow into it,—the St. George's and the Medomak. It is full of islands, ledges and shoals.

George's Islands.

The eastern side of Muscongus Bay is formed, as before mentioned, by the George's Islands, which have been already described on pages 303–304, under the general head of St. George's River. They are sixteen in number, and, beginning at the southernmost, are named Allen's, Burnt, Benner's, Davis', Thompson's, Barter's, McGee's, Two-Bush, Bar, Seavey's, Stone, Teal, Eagle, Caldwell's and Little Caldwell's. To the northward of McGee's Island is **Gay Island,** (described on page 302,) and between them is the main entrance to St George's River.

Gay Island is separated from the mainland by a narrow and crooked strait called **Pleasant Point Gut,** (see page 302.) At its eastern end this Gut has good water, but at its western end it is dry. It connects St. George's River with Davis' Cove,—an indentation in the eastern shore of Meduncook River, just above the entrance.

Little Egg Rock.

Between Pemaquid Point (the western point of entrance to the bay) and George's Islands Muscongus Bay is over eight miles wide. This space is studded with several large islands and many small ones, and is full of ledges and rocks. The easternmost, as well as the most southerly, is Little Egg Rock, already described in the approaches to St. George's River (page 314) as a bare rocky island, lying **N.** by **E.** and **S.** by **W.**, and one hundred and seventy-five yards long. It bears **W.** from the southern end of Allen's Island, over three-quarters of a mile distant.

Seven-eighths of a mile to the southwestward of Little Egg Rock lies **Shark Island,** a bare rocky islet, two hundred and fifty yards long **NE.** and **SW.** There is deep water close to it on its eastern side, but dangerous ledges extend from it to the northward and northwestward for a quarter of a mile.

Eastern Egg Rock.

Eastern Egg Rock is another bare rocky islet, the first met with to the westward of Shark Island, from which it is distant one mile and a half in a **NW.** by **N.** direction. It is three hundred and twenty-five yards long, and lies **N NE.** and **S SW.** A wooden tripod fifty-four feet high has been erected on the northern end of the rock, six feet above high-water mark. The upper half is covered with boards and painted white. The bearings and distances are as follows:

	Miles.
Franklin Island Light-house, N NE	1 ¼
Davis' Straits, E. by N. ¼ N	3 ⅜
Monhegan Light-house, S. by E	6 ⅜
Manana Fog-signal, S. ¼ E	6 ½
Pemaquid Light-house, W. ½ S	5 ⅜

Western Egg Rock.

Western Egg Rock lies **NE.** and **SW.**, one mile and three-quarters **NW. ¼ N.** from Eastern Egg Rock. It is bare, and two hundred and fifty yards long. To the eastward of it shoal water and bare ledges extend six hundred and fifty yards, and to the southward three hundred and fifty yards. Franklin Island Light-house bears **E.** by **N.** from this rock, two miles distant.

Haddock Island.

Still proceeding to the northwestward, the next island met with is Haddock Island, lying near the western shore of the bay. It is low and rocky, a little over a quarter of a mile long, and covered with a growth of stunted spruce trees. Haddock Island lies **NE.** and **SW.**, and is distant from Western Egg Rock a little over a mile in a **NW.** direction. It lies on the eastern side of the entrance to Muscongus Sound, and is the southernmost of the islands which guard the approaches to that roadstead.

Pond Island.

Six hundred yards **NE.** from Haddock Island is a low, bare, rocky island, nearly seven hundred yards long, named Pond Island, but called by some **Ross' Island.** From the northern end of Pond Island the southern point of Muscongus Island bears **N NW.**, distant over half a mile. Between Haddock Island and Pond Island is a wide channel with from four to seven fathoms at low water. Between Pond Island and **Bar Island** (off the southern end of Muscongus) is another wide channel with ten fathoms leading into **Marsh Harbor.** This channel is over six hundred yards wide between the lines of three fathoms. Seven fathoms at low water may be taken between Marsh Island and Pond Island by keeping close to the northern end of the latter.

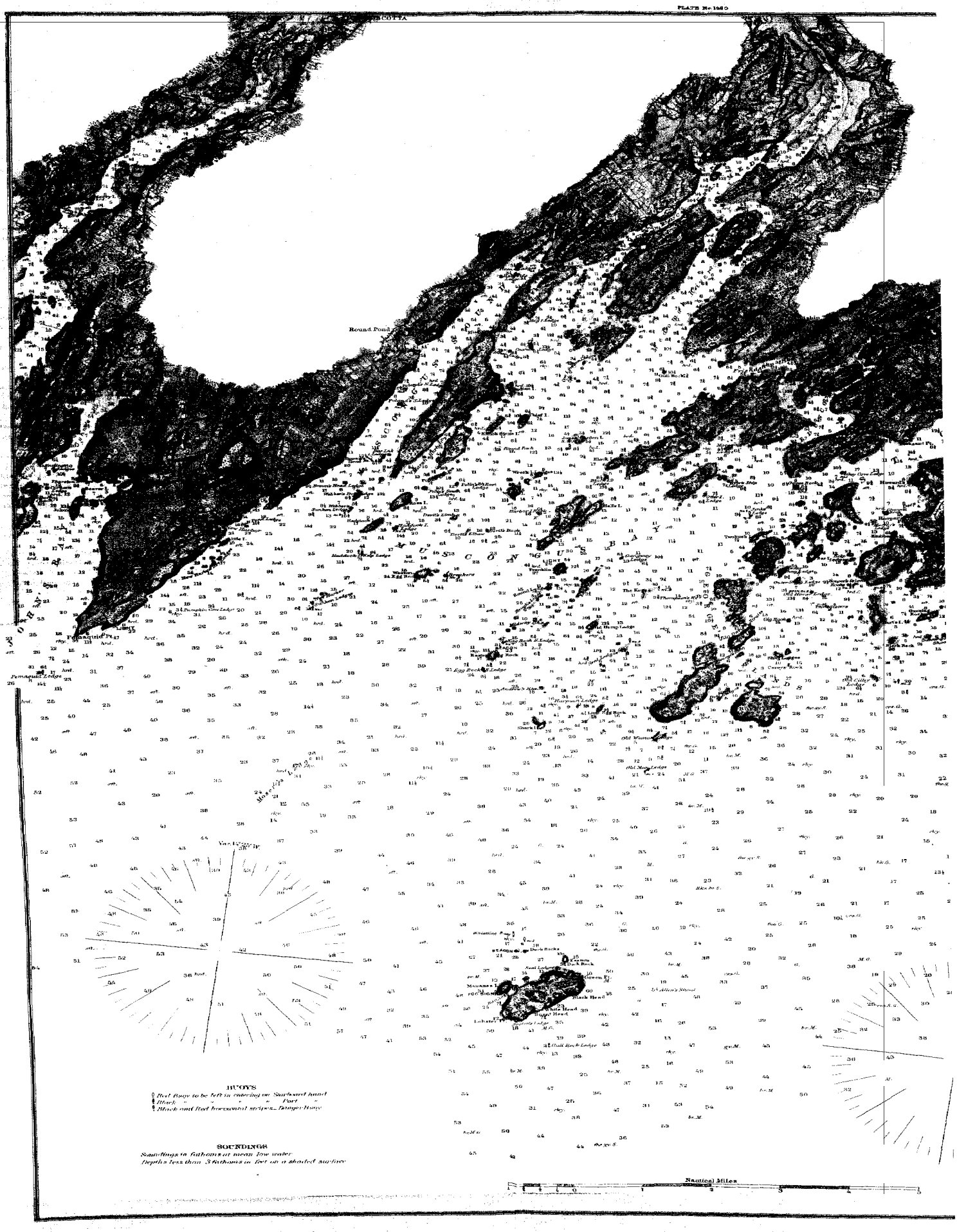
The shores of Pond Island are bold, especially on the western side, where three fathoms at low water may be carried close to the land. Bar Island, however, is surrounded by shoal water, and must not be approached from the southward nearer than two hundred and seventy-five yards. The southern end of **Marsh Island** is also dangerous to approach,—the ledges extending several hundred yards to the southward and westward from it, and two large ledges occupying the middle of the passage between it and Pond Island.

Wreck Island.

In the middle of the entrance to Medomak River, a mile and a half **E.** by **N.** from Pond Island, lies a round, rocky island, covered with a thick growth of pine and oak trees, and called Wreck Island. It is about three hundred and twenty-five yards in diameter and about twenty feet high.

Harbor Island.

Next to the eastward of Wreck Island, five-eighths of a mile distant, is Harbor Island. It is the most southerly of that long line of islands lying between the entrance to Medomak and Meduncook rivers, and is also a guide to the entrance to St. George's River,—the Western Passage passing between it and Franklin Island, (see page 319.) It lies **N.** by **E.** and **S.** by **W.**, is three-quarters of a mile long and four hundred yards broad.



BUOYS

Red Buoys to be left in entering on Starboard hand
Black " " " " Port "
Black and Red horizontal stripes—Danger Buoys

SOUNDINGS

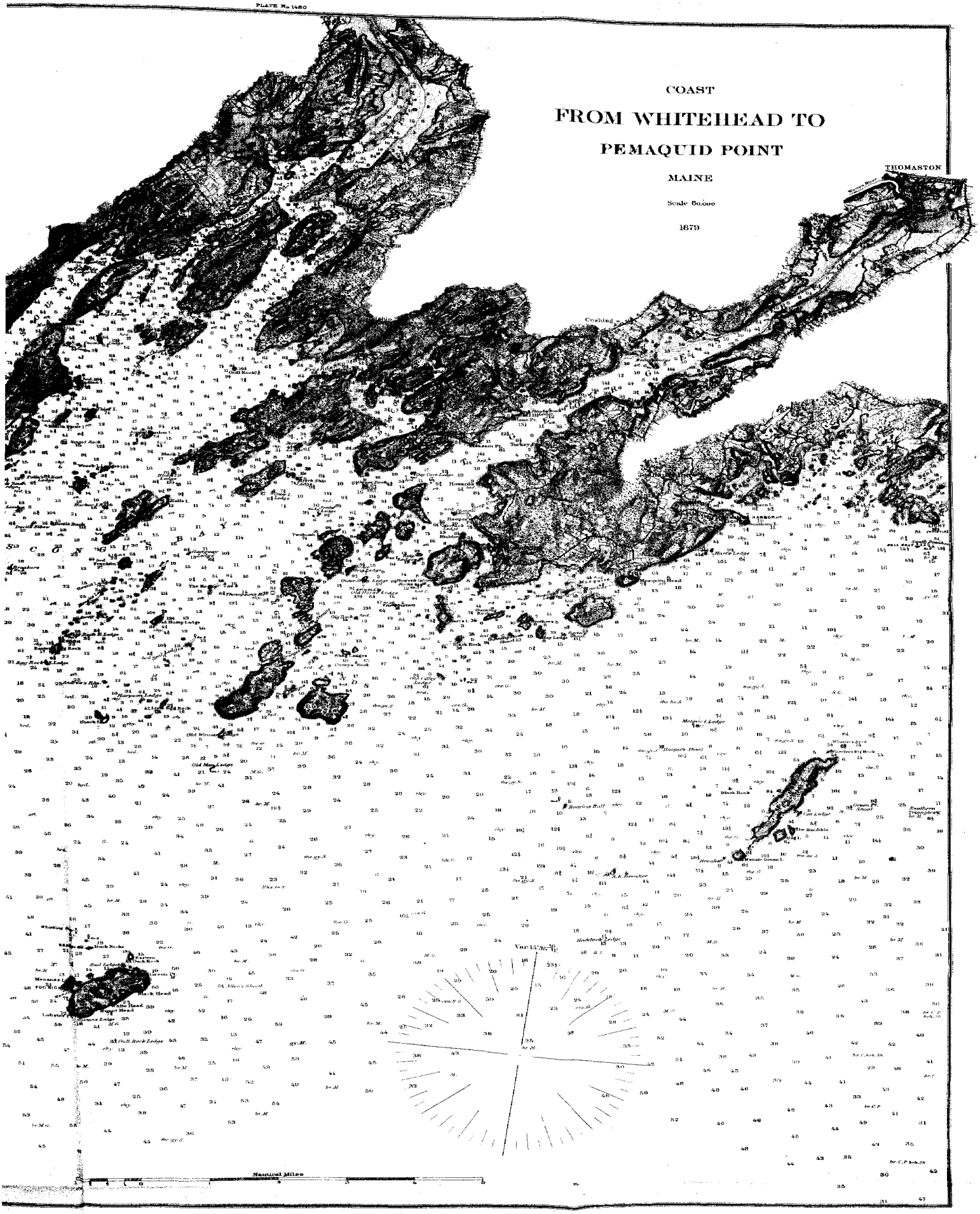
Soundings in fathoms at mean low water
Depths less than 3 fathoms in feet on a shaded surface

PLATE No. 1480

COAST
FROM WHITEHEAD TO
PEMAQUID POINT
MAINE

Scale 80,000

1879



From its southern end Franklin Island Light-house bears **S.**, five-eighths of a mile distant. Harbor Island is low, except on its western side, where there is a small, rather steep hillock, about sixty feet high, with a wooded summit. This island is otherwise bare of trees with the exception of a pine grove near its southern end. About one hundred and seventy-five yards to the southward of it is a low islet with a few scattered spruce upon it, known as **Crane Island.**

Hall's Island.

Three hundred and twenty-five yards to the eastward of the northern end of Harbor Island is another islet, called Hall's Island, lying **NE.** by **N.** and **SW.** by **S.**, and connected with Harbor Island at low water by a reef of rocks. It is low and has a grove of trees near its northern end. (See also page 319.)

Franklin Island and Light-house.

Franklin Island lies about five-eighths of a mile (twelve hundred yards) **S.** from Harbor Island, and is low and rocky. It extends **N NE.**, and is nearly a quarter of a mile long. The crest of the island, forty feet above sea-level, has a few stunted spruce upon it, and there are a few more trees along its eastern face. The rest of the surface is bare. On the western shore, and near the northern end, is Franklin Island Light-house, (the guide to St. George's, Meduncook and Medomak rivers,) a white tower, thirty-five feet high, showing a fixed white light of the fourth order, varied by flashes, from a height of fifty-four feet above the sea. It is in

Latitude ..... **43° 53′ 31″ N.**
Longitude ..... **69° 22′ 30″ W.**

Otter Island.

Exactly two miles **NE.** from Franklin Island, in the mouth of Meduncook River, lies Otter Island. It is seven-eighths of a mile long in a **NE.** and **SW.** direction, and has an average width of a quarter of a mile. It is well wooded from its southern end to within about four hundred yards of its northern extremity. At its southern end it is forty feet high, but the centre of the island is quite low. The cleared land at its northern end is about thirty feet high and has a few houses on it.

Cranberry Island.

Cranberry Island is a large island, lying half a mile to the westward of Otter Island, three hundred yards to the southward of Friendship Long Island, and separates the approach to Meduncook from the entrance to Medomak River. It is of irregular shape, extends **E NE.** and **W SW.**, and is over a mile long. The southern end is a small neck of land connected with the main portion of the island by a very narrow and low strip of sandy land; and is well wooded, but low. The middle of the island is also wooded, but the northern end is cleared and thinly settled. The highest land is near the centre, and is sixty feet above high-water mark.

Cedar and Black Islands.

There is no passage between Cranberry Island and Friendship Long Island; but an excellent channel a quarter of a mile wide exists between it and Otter Island, (see page 315.) On the western side of Cranberry Island, and close to its southern end, are two islets, named, respectively, Cedar Island and Black Island. The former is about one hundred and fifty yards long, wooded and low; and is so close to Cranberry Island as to appear part of it until approached very closely. Black Island is a little over two hundred yards to the westward of Cedar Island. It is a quarter of a mile long in a **NE.** and **SW.** direction, about thirty feet high, and wooded with a growth of stunted spruce trees. Five feet at low water may be taken between it and Cedar Island.

Jones' Garden.

About midway between Cranberry Island and Thief Island, and bearing about **E.** by **S.** ½ **S.** from the latter, is a low, bare, rocky islet called Jones' Garden, about one hundred and fifty yards long. Jones' Garden is in the middle of the entrance to Medomak River, and is about three-quarters of a mile distant from Cranberry and Thief islands.

The islands above described lie mostly in the southern part of Muscongus Bay; but there are many others lying along the western and northern shores of the bay, and in the approaches to the several harbors and rivers, which will be described in place.

Pemaquid Neck.

The western shore of Muscongus Bay, from Pemaquid Point to Brown's Head, (the western point of entrance to Muscongus Sound,) about five miles above, has a general course nearly **NE.** ½ **N.**, and is formed entirely by Pemaquid Neck, which separates this bay from John's Bay to the westward. The land is mostly thickly wooded, with occasional cleared fields dotted with houses,—rising, about half a mile back from the shore, to heights varying from one hundred and fifty to two hundred feet. The shore is bold-to, (with the exception of several dry ledges, and one or two sunken ones which lie about two miles and a half above Pemaquid Point,) and may be safely approached within an eighth of a mile with not less than six fathoms.

Pemaquid Point.

Pemaquid Point, the western point of entrance to Muscongus Bay, is low and bare, and forms the southwestern extremity of Pemaquid Neck, which separates Muscongus Bay from John's Bay to the westward of it. Its extreme southwestern point is in

Latitude ..... **43° 49′ 54″ N.**
Longitude ..... **69° 30′ 31″ W.**

Pemaquid Light-house.

On the eastern side of the point, nearly half a mile above the southwestern extremity, is built Pemaquid Light-house, which is a guide to John's Bay, Muscongus Bay, and the approaches to St. George's River. This important light-house is a white tower thirty-two feet high, showing a fixed white light, of the fourth order, from a height of seventy-five feet above the sea. This light should be visible in clear weather fourteen miles. The light-house is connected by a covered way with the keeper's dwelling, which is a few yards to the westward of the tower. Its geographical position is

Latitude ..... **43° 50′ 12″ N.**
Longitude ..... **69° 30′ 22″ W.**

Yellow Head. About three-quarters of a mile above Pemaquid Light-house makes in a small semicircular cove, called **Pumpkin Cove**;—with deep water and entirely unobstructed; and nearly five-eighths of a mile to the northward of this is Yellow Head, a somewhat steep bluff, sixty feet high, and wooded to within one hundred yards of the water's edge.

One mile and an eighth to the northward of Yellow Head, and nearly two miles and a half **NE.** by **N.** from Pemaquid Light-house, is the entrance to New Harbor. This harbor runs about **W.** for nearly three-quarters of a mile, and has an average width of one hundred and seventy-five yards, with a depth of ten feet at mean low water to convenient

New Harbor. anchorage. In the mouth of the cove there is a depth of six fathoms, but this deep channel is very narrow and crooked. From the southern side, near the entrance, a narrow arm runs about **W SW.** for nearly four hundred yards, having a width of nearly one hundred yards. Fourteen feet at mean low water may be taken into it for about one hundred yards, but beyond this it is all shoal. This cove is called **Back Cove.** The shores of New Harbor are cleared and settled.

New Harbor Dry Ledges. The approach to New Harbor from the southward is obstructed by three small islands lying nearly **N.** and **S.** from each other, close to the shore. The two southernmost are merely bare rocks a quarter of a mile from shore, and called New Harbor Dry Ledges; while the northernmost is an islet with a few spruce trees on its summit, called **Little Island.** It is one hundred and seventy-five yards from shore. There is, however, good water inside of all of these rocks.

From New Harbor to the entrance to Long Cove, about half a mile to the northeastward, the land presents the same general features,—being thickly wooded, and rising to a height of about seventy feet. Long Cove is three hundred

Long Cove. and fifty yards wide at its mouth, and is a good harbor, but open to the southward. Three fathoms at mean low water may be carried nearly to the head of the cove,—the entrance being clear, with ten fathoms in the channel, and bold shores. The cove penetrates the land in a **N.** by **E.** direction for a quarter of a mile.

From Long Cove to Brown's Head the shore runs about **NE.**, and the distance is a mile and three-eighths. The character of the shores is the same as that to the southward. The highest land in this vicinity, on Pemaquid

Brown's Head. Neck, is a thickly wooded hill two hundred feet high, and distant from the shore-line about a mile and a quarter,—being nearly midway between the eastern and western sides of the neck. Brown's Head is a wooded point, about twenty feet high, back of which the land rises to a height of one hundred and forty feet, and is thickly wooded to its summit with oak, birch, &c., interspersed with pine and hemlock.

The dangers in, and sailing directions for, Muscongus Bay will be found in the descriptions of the approaches to the several rivers and harbors contained within its limits.

MEDUNCOOK RIVER.

The entrance to this river is between Gay Island on the east and Morse Island on the west, and is a little over a quarter of a mile wide. The channel runs **NE.** past Morse Island; then **N.** towards Crotch Island, three-quarters of a mile. Leaving Crotch Island to the westward, it passes between that island and the eastern shore until past the northern end of the former. Here it takes an abrupt turn to the northward and westward through a narrow, crooked and much-obstructed passage, which runs about **N.** by **W.** for a quarter of a mile past the northern end of Crotch Island. Hence the courses are, first **NE.** by **E.**, then about **NE.** ½ **N.**, and then about **N NE.** to the head of navigation. Seven feet at low water may be carried up this river two miles from its mouth.

Gay Island has been already described on page 302. Morse Island lies on the western side of the entrance to Meduncook River, is about half a mile long and a quarter o a mile wide, extends **NE.** and **SW.**, and is moderately high, with spruce and pine trees upon it. Its eastern face is bold, except off the northeastern point of the island, where dry

Morse Island. ledges extend to the eastward for over six hundred yards. The northern end of Morse Island is bare of trees and occupied by a few houses; and the island is separated, on the west, from Friendship Long Island by a passage six hundred yards wide. This strait or passage is, however, so completely filled with bare rocks, sunken ledges and ledges bare at low water, as to render it useless at low water for anything larger than a boat. Its northern end is bare at low spring tides.

Davis' Cove is an indentation in the eastern shores of Meduncook River, just above the western entrance to Pleasant Point Gut, which leads into St. George's River. It runs **NE.**, and is three-quarters of a mile long. At its mouth it is a little over half a mile wide, and gradually narrows to its head, and there are no obstructions. The southeastern shore is

Davis' Cove. the boldest, but both shores may be approached quite closely,—three fathoms at low water being carried for a quarter of a mile into the cove. The shores are moderately high, partly bare and partly wooded. The wooded hills on the northern part of the peninsula give the shores the appearance, when viewed from a distance, of being well wooded.

Crotch Island lies about three-quarters of a mile **NE.** from Morse Island, extends in a **NE.** and **SW.** direction, and is about five-eighths of a mile long. On its northern side a long narrow cove, dry at low water, makes in a **SW.** direction, nearly dividing the island into two parts;—hence its name. Crotch Island is low, and presents the same characteristics as the other

Crotch Island. islands,—the trees being mainly spruce. The eastern shore has only a few scattered trees,—the woods standing a little back from the water's edge. The main channel lies on the eastern side, between it and the mainland, and is one hundred and fifty yards wide in its narrowest part. On the western side of the island

there is a passage a quarter of a mile wide, separating it from the western shore of the river; but this passage is mostly occupied by flats and shoals,—the channel being only one hundred and fifty and in some places only seventy yards wide, with seven feet at low water. It is very crooked also, and not available except at high water.

After passing Crotch Island, a long and narrow cove, called Hornbarn Cove, running in on the eastern side of the river, is reached. Its general course is **NE.**, and it is nearly three-quarters of a mile wide. Two fathoms at low water may be carried some distance into this cove, but the upper half of it is dry before low water. **Hornbarn Cove.** The western point of entrance to this cove is called **Bradford's Point.**

On the western shore of Meduncook River, three-quarters of a mile above Crotch Island, the river sends off another branch, known as **Back River.** It is crooked and for the greater part of its length narrow, but at its entrance it is three-eighths of a mile wide. Back River is almost entirely bare at low water.

Meduncook River is very dangerous navigation for strangers, being full of flats and ledges. At low water these ledges show themselves, but there is then but little water in the channel itself. The shores are hilly and the surface undulating. Part of the land is cleared, part bare, and much of it wooded with pine, spruce, birch, &c. A high hill on the eastern shore, bearing **E.** from the northern end of Crotch Island, is known as **Hornbarn Hill**, and one on the western shore, bearing **W.** from the same point, is called **Meduncook Hill.** Both shores are very thinly settled.

DANGERS

IN APPROACHING AND ENTERING MEDUNCOOK RIVER.

I. ***From the Eastward, through Muscongus Bay.***—The best entrance to Meduncook River for vessels bound from the eastward of George's Islands is along the western shore of those islands. Therefore, after passing between Monhegan and Allen's islands, the first danger met with is Little Egg Rock Shoals. Little Egg Rock should not be approached nearer than one hundred yards on its eastern side. From its northern end shoal water extends to the northward two hundred and fifty yards. A shoal with twelve feet at mean low water lies **SSW.** from the islet, about six hundred yards distant, but is dangerous only to vessels bound in by this passage from the southward. ***Little Egg Rock Shoals.***

Passing Little Egg Rock there is seen to the northward a red spar-buoy (No. 2). This is on the northern side of the most northerly of the Seal Ledges, and is intended as a guide to the Davis' Straits passage. Going into Meduncook by this passage vessels pass to the eastward of it. The southernmost Seal Ledge is five-eighths of a mile **N.** from Little Egg Rock, and its shoalest spot has six feet at mean low water. Six hundred and seventy-five yards **NE.** by **N.** from this ledge is the northernmost Seal Ledge, a large rock, dry at low water, with several small detached rocks lying close to its northwestern and southeastern sides. A quarter of a mile **S.** by **E.** from this rock is another, a pinnacle rock, with thirteen feet. But for this thirteen feet rock the passage between the northern and southern ledges would be unobstructed, and with eleven fathoms at mean low water. The Seal Ledges are marked only by breakers and the red buoy mentioned above. ***Seal Ledges.***

Thompson's Rock, the westernmost of the *Thompson's Island Rocks,* (see page 314,) is on the eastern side of the entrance,—being between five and six hundred yards **SW.** by **W.** ½ **W.** from the northwestern end of Thompson's Island and a mile and a half **NE.** by **E.** from the northernmost Seal Ledge. It has eleven feet at mean low water and is not buoyed. ***Thompson's Rock.***

Due **W.** from Thompson's Rock, three-quarters of a mile distant, lie two round rocks, bare at low water and surrounded by shoals. They are **NE.** and **SW.** from each other, and about two hundred yards apart. Between the lines of three fathoms these rocks cover a space of three-eighths of a mile long by three hundred and seventy-five yards wide, and are marked by a black spar-buoy (No. 9) placed in four fathoms on their eastern side. The northern end of this shoal bears **E.** ½ **S.**, one mile and a half from Franklin Island Light-house, and **W.** ½ **N.**, seven-eighths of a mile from the southwestern end of Thompson's Island. This ledge is called The Kegs. ***The Kegs.***

When past Thompson's Island the channel is clear until, when nearly up with Two-Bush Island, (off the northwestern end of McGee's Island,) there will be seen to the eastward, and about half a mile distant, a red spar-buoy. This is on Jenks' Ledge, a dangerous ledge, which also obstructs the entrance to St. George's River, (see page 314,) lying three-eighths of a mile **N.** by **W.** ½ **W.** from Two-Bush Island, one mile and a quarter **N.** by **E.** ½ **E.** from the northwestern end of Thompson's Island, and one mile **SE.** ¾ **S.** from the northeastern end of Otter Island. It is awash at mean low water and bare at low spring tides. The buoy is marked No. 2, and is placed off the northwestern end of the ledge as a guide to St. George's River. Vessels bound into Meduncook must not go to the eastward of the Jenks' Ledge buoy bearing **NE.** by **E.**, as there is *a spot with seventeen feet at mean low water* six hundred yards **SW.** from that buoy. ***Jenks' Ledge.***

Otter Island Ledge is next met with, lying close to Otter Island. This rock has eight feet at mean low water, and is about four hundred yards from the eastern shore of Otter Island, near its southern end. It has no buoy, but one has been recommended to mark it. The channel between Otter Island Ledge and Jenks' Ledge is more than half a mile wide, with from seven to eleven fathoms at mean low water.

Otter Island Ledge.

Byer's Ship Ledge is also on the western side of the channel, three-eighths of a mile to the northward and eastward of Otter Island Ledge. It is a bare rock, surrounded by shoal water, lying two hundred and fifty yards E. ½ S. from the northeastern end of Otter Island. Beyond this bare rock a long ledge, in places dry at low water, extends in the same direction four hundred yards farther, so that the northeastern end of Otter Island must receive a berth of not less than seven hundred yards to avoid this ledge. There is no buoy here, but one has been recommended to mark it.

Byer's Ship Ledge.

After passing Byer's Ship Ledge the channel turns to the northeastward to enter Meduncook, passing between Gay Island on the east and Morse Island on the west. Here, if beating in or out, look out for Moss or Morse Ledges, dry at low water, and extending in a SW. by W. direction from the southern end of Morse Island for half a mile. They are not buoyed, and always show themselves. When past them the eastern shore of Morse Island is quite bold, but *two bare rocks lie off the western shore of Gay Island* at a distance from it of over two hundred yards. These must be avoided by giving Gay Island a berth of three hundred yards, or, if the wind allow, hugging the eastern shore of Morse Island.

Moss or Morse Ledges.

After passing Morse Ledges keep over towards the Gay Island shore to avoid a long and dangerous reef extending due E. for nearly six hundred and fifty yards from the northeastern point of Morse Island. It is dry at low water. and is called Northeast Point Reef. It is not buoyed, as it always shows; but to avoid it vessels should give this point of Morse Island a berth of at least seven hundred yards.

Northeast Point Reef.

From this point there is a clear passage into Davis' Cove. The channel up the river now passes between the mainland on the east and Crotch Island on the west, but the western side of the channel is obstructed by Crotch Island Ledges. Shoal water extends from the southwestern end of Crotch Island to the southward and westward a quarter of a mile, and to the southward over three hundred yards. Along the southern edge of these shoals seventeen feet at low water may be carried in a line from Captain Davis' house (on the southern point of entrance to Davis' Cove) towards the middle of Garrison Island, a small island lying about a mile to the northward of Morse Island, on the eastern side of Friendship Harbor, in Medomak River. This passage leads up between Meduncook Peninsula and the western side of Crotch Island; and only seven feet at low water can be taken through it, although the course towards Garrison Island will strike five fathoms. This, however, is a mere hole. This channel separates the flats making off from Crotch Island from an extensive shoal to the southward and westward, which extends N. and S. from the southern end of Meduncook Peninsula to within three hundred and fifty yards of Morse Island. A channel, with not less than sixteen feet at low water and two hundred yards in width, leads between this flat and Morse Island, and along the northern shore of Friendship Long Island into Friendship Harbor. This extensive flat is mostly dry at low water, and over its surface are scattered numerous ledges, to which, with those making off from Crotch Island, the common name Crotch Island Ledges has been given. They are not marked by buoys. To a vessel attempting this passage into Friendship Harbor the best advice that can be given is to hug the northern and northeastern shores of Morse and Friendship islands, keep the lead going, and avoid less than two and a half fathoms. But strangers should never attempt this passage, or, indeed, the Meduncook River beyond Crotch Island.

Crotch Island Ledges.

The passage between the mainland and Crotch Island is only a little over a hundred yards wide in its narrowest part; and between the lines of three fathoms at the same point the channel is only thirty yards wide. This point is about two-thirds of the way from the southern to the northern end of Crotch Island. The best water is in the middle of the river; and there is here a strong tidal current.

From the northern end of the eastern fork of Crotch Island *ledges and flats, dry at low water,* extend about E NE. for two hundred and fifty yards, and from the western fork they extend in the same direction two hundred yards. One hundred and fifty yards to the northward of the northeastern end of these ledges is *a detached rock, with three feet at mean low water but awash at low spring tides.* About eighty yards E. by N. from the northwestern end of the same ledges is *a rock dry at three-quarters ebb.* Thus by the shoal water surrounding these ledges the channel is made very crooked and exceedingly narrow,—being only forty yards wide between the lines of two fathoms.

After passing between the northern side of Crotch Island and Bradford's Point the channel turns to the northward. Both shores are flat, and the best water is in the middle of the river until off the mouth of Back River, where the flats, dry at low water, make off for a quarter of a mile from shore; and there is *a two-feet rock exactly in the middle of the channel,* one hundred and fifty yards to the eastward of the dry shoals. To avoid these, hug the eastern shore.

But, as none will ever attempt to pass up this river beyond Crotch Island unless familiar with the rocks and shoals, it is useless further to refer to these obstructions.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MEDUNCOOK RIVER.

I. ***From the Eastward, through Muscongus Bay.***—Bring Monhegan Light-house to bear **S.** ½ **W.**, distant four miles and a quarter, and Franklin Island Light-house **N.** by **W.** ½ **W.**, distant three miles and three-quarters, when there will be twenty-one fathoms, hard bottom. Now steer **N.** by **E.** ¼ **E.** along the western side of George's Islands, passing to the eastward of Little Egg Rock three-eighths of a mile; to the eastward of Seal Ledges buoy seven hundred yards; to the westward of Thompson's Rock a quarter of a mile; and to the eastward of The Kegs half a mile. Continue this course, upon which there is not less than eleven fathoms, until up with Jenks' Ledge buoy. Pass to the westward of this buoy three-eighths of a mile, and when Franklin Island Light-house bears **SW.** by **W.** ¼ **W.** and the southern end of Otter Island **W.** ½ **N.**, with eleven fathoms, soft bottom, steer **NE.** by **N.** ½ **N. Nearly**, for the easternmost point of Morse Island, and continue this course (upon which the least water is six fathoms) until abreast of the southeastern point of the island and about two hundred yards from shore. Now steer **NE.** by **E.**, between Gay and Morse islands, keeping the latter best aboard to avoid the two bare rocks which lie off the shore of Gay Island. This course will carry, with nothing less than five fathoms, safely into Davis' Cove, where you may anchor at discretion. *But, if bound up the river*, as soon as the entrance to Pleasant Point Gut begins to open from behind the northwestern point of Gay Island, and you are in five fathoms water, soft bottom, steer **N.** ¼ **E.** for the middle of Crotch Island. This course carries not less than five fathoms. When the middle of the passage between Crotch Island and the mainland bears **NE.** steer that course, keeping carefully in the middle; and this course will lead safely into Hornbarn Cove. There will be found not less than twenty-one feet on the course, and in Hornbarn Cove from seven feet to four fathoms. *But, if bound farther up*, after passing the northeastern end of Crotch Island, when exactly abreast of the fish-house on the eastern shore of the passage, steer **NW.** for one hundred and fifty yards, keeping the fish-house astern. This avoids the *three-feet rock* on the northern side of the channel, and there is not less than three fathoms. When past this rock steer **N.** ½ **W.** for two hundred and seventy-five yards, which course will lead through, between the dry ledges off Crotch Island and the rock off Bradford's Point, with not less than three fathoms. After passing these obstructions steer **NW.** for three hundred yards, after which keep in the middle of the river until off the mouth of Back River, when keep more over towards the eastern shore to avoid Back River flats. On these last courses there is a very narrow channel, and above Back River soundings of seven and nine feet.

No stranger should attempt to pass beyond Hornbarn Cove. An intimate knowledge only of the locality and extent of the various ledges and flats will enable a mariner to thread this narrow and crooked channel.

To pass into Friendship Harbor from Meduncook River.—Bring the dwelling-house on the northern side of the entrance to Pleasant Point Gut to bear **SE.** and steer **NW.** by **W.** ½ **W.** This avoids Northeast Point Reef and the Crotch Island Ledges, and there is not less than fifteen feet. On this course bring the southernmost point of Garrison Island to bear **N.** ½ **E.**, with sixteen feet water, and steer **N.** ¼ **W.** until in the middle of the entrance to the passage between Garrison and Friendship Long islands. Now steer **N NE.** up the middle of the passage, and there will be not less than twenty feet water. After passing through this passage the harbor is made, and vessels may anchor according to draught. The depths are from seven feet to four fathoms. *But, to round the northern end of Friendship Long Island and anchor on the western side*, continue the course **N NE.** until the southern point of Crotch Island begins to open from behind the northern end of Garrison Island. Then steer **W.** by **S.** ⅛ **S.** down the channel, taking care to keep about four hundred yards from the northern point of the island to avoid the shoal water which makes off from that point. On this course there is not less than fifteen feet, and deeper water can be had by keeping over towards Jameson's Point.

DANGERS

IN APPROACHING AND ENTERING MEDUNCOOK RIVER.

II. ***From the Southward and Southwestward, by the Old Hump Channel, through Muscongus Bay.***—Vessels coming in from the southwestward will find a good channel, known as the **Old Hump Channel**, through the bay to the northward, by entering to the eastward of Eastern Egg Rock, between it and Shark Island, and following that passage into St. George's River. ***Egg Rock South Ledge.*** In approaching by this passage Egg Rock South Ledge is first met, lying **S.** by **W.**

½ W. from Eastern Egg Rock, four hundred yards distant. It has eight feet at mean low water, and is the southernmost ledge of the Franklin Island Shoals. (See page 316.) This ledge bears SSW., two and an eighth miles from Franklin Island Light-house. A good channel, two hundred and twenty-five yards wide, with six fathoms water, passes to the northward of Egg Rock South Ledge, between it and Eastern Egg Rock.

Andrews' Rocks. Guarding the eastern side of this entrance, and bearing from Eastern Egg Rock SE. ¾ E., nearly three-quarters of a mile distant, lie two dangerous rocks NW. and SE. from each other, two hundred yards apart, and known as Andrews' Rocks. The western rock has five feet at mean low water, but the eastern one is awash. There is from ten to thirteen fathoms close-to on all sides of them. A buoy has been recommended to be placed off the westernmost rock.

Franklin Island Shoals. Passing between Egg Rock South Ledge and Andrews' Rocks, you will pass to the eastward of a long line of detached rocks and long ledges extending from Eastern Egg Rock to Franklin Island. These are the Franklin Island Shoals. Exclusive of Egg Rock South Ledge they are four in number, viz: Egg Rock North Ledge, Midway Rocks, Hough's Ledge and Round Ledge. These ledges are separated by channels with from three to ten fathoms water,—the two most commonly used being the passage between Egg Rock North Ledge and Eastern Egg Rock, which has eight fathoms, and that between Franklin Island and Round Ledge, which has nine fathoms. A minute description of these shoals has been given on page 317.

The easternmost of the Midway Rocks lies on the western side of this channel, about a mile S. ¼ W. from Franklin Island and three-quarters of a mile NE. from Eastern Egg Rock. It runs NE. by N. and SW. by S., is three hundred and fifty yards long, awash at low water, and is dangerous to vessels beating, as it is not buoyed.

Old Hump Ledge. When up with the Midway Rocks there will be seen to the eastward a bare rock, about one hundred and fifty yards square, with several smaller rocks to the northeastward of it. This is the Old Hump Ledge, giving the name to this channel. Old Hump Ledge lies one and one-fifth miles SE. by S. ½ S. from Franklin Island Light-house, and NE. by N. ½ N., one mile and a quarter from Andrews' Rocks. To the northward and eastward a group of bare ledges is seen connected with the main rock at low water, and from them shoal water extends to the northward two hundred yards, at which distance lies a rock with twelve feet at low water. There are passages with from six to fifteen fathoms on both sides of the Old Hump.

Long Ledge. After passing the Old Hump the next ledge is on the western side of the channel, and is called Long Ledge. It is a group of bare rocky islets, forming, at low water, a dry ledge three-eighths of a mile long. Shoal water, and rocks bare at low water, extend to the northward of the dry ledge one quarter of a mile and to the southward one hundred and seventy-five yards. The northern end of Long Ledge is five-eighths of a mile E. ½ N. from Franklin Island Light-house. The southern end is a little over half a mile SE. by S. ½ S. from that light, and half a mile NW. by N. ¾ N. from the Old Hump, with the channel passing between them.

The western side of Old Hump Ledge is bold-to, and may be approached within one hundred yards in six fathoms. Three fathoms at mean low water may be carried safely to within one hundred and fifty yards of the eastern side of Long Ledge. Its northern end, however, should not be approached closely, as there are two rocks, bare at low water, on the extreme northern point of the shoal.

Wher up with Long Ledge, *The Kegs* will appear to the eastward,—the channel passing to the westward of them. They have been already described as one of the obstructions to this river, on page 329.

Gangway Ledge. On the western side of the channel the first ledge met with to the northward of Long Ledge is called Gangway Ledge. It bears NE. ½ E. from the northern end of Long Ledge, a little over five hundred yards distant. Gangway Ledge is a rocky islet one hundred yards long, lying NE. and SW., and surrounded by shoal water. From it Franklin Island Light-house bears W. by S. ½ S., nearly one mile distant. The southwestern end of Otter Island bears NE. by N. ½ N., one mile and three-eighths distant.

After passing Gangway Ledge this channel joins the eastern channel, the dangers in which have been described on pages 329–330.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MEDUNCOOK RIVER.

II. ***From the Southwestward, by the Old Hump Channel through Muscongus Bay.***—Open Franklin Island Light-house to the eastward of Eastern Egg Rock on a bearing of NNE., and steer on that range until Pemaquid Light-house bears W. by N. ½ N.; when you will be nearly one mile and a third from Eastern Egg Rock, and in about twenty-two fathoms water, hard bottom. Now

steer **NE.** ⅝ **N.**, which course will lead clear through the channel at a good distance from each and all of the obstructions, and in not less than three and a half fathoms. Continue this course until the southernmost point of Otter Island bears **W.** ½ **N.**, a little abaft the beam, and you are in eleven fathoms, when steer **NE.** by **N.** ½ **N.** until abreast of the southeastern point of Morse Island, in six and a half fathoms water; when steer **NE.** by **E.**, and proceed as directed for coming from the eastward, (page 331.) *Sailing Directions--Meduncook River.*

The last two courses will carry not less than six and a half fathoms.

DANGERS

IN APPROACHING AND ENTERING MEDUNCOOK RIVER.

III. ***From the Westward, by the Western Passage through Muscongus Bay.***—This channel is also the Western Passage into St. George's River. Its entrance is between Eastern Egg Rock on the east and Western Egg Rock on the west. It is wide and deep, and is very little obstructed. Between Eastern and Western Egg rocks it is a mile and two-thirds wide.

New Harbor Sunken Ledges do not properly belong to the obstructions of this channel, as vessels bound in with a free wind will not pass within a mile of them. But with the wind ahead, it is well to know how far to the northward and westward it may be safe to stretch in beating up towards the entrance. These ledges are three in number, lying **N NE.** and **S SW.** The northernmost ledge has nine feet water, and bears **E.** by **N.** ½ **N.** from Pemaquid Light-house, a little over three miles distant. The middle one lies two hundred and seventy-five yards **S SW.** from the northernmost, and has eleven feet at mean low water. The shoal of this rock bears **E.** by **N.** ¼ **N.**, a little less than three miles from Pemaquid Light-house. The southernmost rock has fifteen feet at mean low water; lies seventy-five yards **S.** by **W.** ½ **W.** from the middle one; and bears from Pemaquid Light-house **E.** by **N.** ⅛ **N.**, two miles and seven-eighths. These rocks are marked by a black spar-buoy (No. 1) placed one hundred yards **E.** by **S.** from the southernmost shoal. To avoid them, go about as soon as ten fathoms is struck. *New Harbor Sunken Ledges.*

From the northeastern end of Western Egg Rock a line of breakers extends about **E.** for six hundred and fifty yards. Near the eastern end of this line there is *a rock with four feet at mean low water*. A black spar-buoy, marked No. 5, is placed in five fathoms just to the southward of this rock. As a general rule, in approaching Western Egg Rock, do not go inside of ten fathoms at low water in order to avoid these shoals.

The eastern side of this channel is bounded by the *Franklin Island Shoals*, which have been before described. They extend from Franklin Island to Eastern Egg Rock, a distance of two miles. To avoid them do not go inside of ten fathoms at low water.

The Devil's Elbow, although belonging more strictly to the Medomak River obstructions than to this channel, should be known to mariners that they may not, in stretching to the westward, go too far. It is a very dangerous rock, bare at low water, which lies one mile **NE.** by **N.** from Western Egg Rock, and is not buoyed. There is a wide and good channel between it and Egg Rock with from seven to eighteen fathoms at low water. To avoid this ledge, when near it, do not go inside of the line of ten fathoms. *The Devil's Elbow.*

Between five and six hundred yards to the eastward of The Devil's Elbow is another ledge, bare at three-quarters ebb, called The Devil's Back. It bears from Western Egg Rock **NE.**, distant a little over a mile, is quite bold-to, and may be safely approached in any direction to within one hundred and fifty yards with five fathoms water. *The Devil's Back.*

The channel now passes between Franklin Island on the southeast and Crane Island on the northwest. Crane Island should receive a berth of two hundred yards to the westward from vessels entering by this passage. Harbor Island may be approached on its southeastern side within two hundred yards with not less than six fathoms water. On its eastern side it must not be approached within less than five hundred yards, to avoid the ledges between it and Hall's Island, which latter should receive a berth of two hundred yards to the westward. This will give not less than ten fathoms water.

To enter Meduncook River by this passage you may go on either side of Otter Island. The channel to the eastward joins at once the other channel, whose obstructions have been already described. To the westward, (that is, between Otter and Cranberry islands,) keep the Otter Island shore aboard to avoid the shoals off Little Island. These shoals, mostly dry at low water, extend a quarter of a mile to the eastward of Cranberry Island. Little Island should therefore receive a berth to the westward of not less than one hundred and seventy-five yards. *Shoals off Little Island.*

About a quarter of a mile above the southern point of Otter Island *a shoal makes out from the western shore for about two hundred and fifty yards.* Vessels may avoid both this and the shoals off Little Island by keeping about midway between the two islands in passing them.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MEDUNCOOK RIVER.

III. ***From the Westward, by the Western Passage through Muscongus Bay.***—When Pemaquid Light-house bears **N NE.**, distant a mile and a half, with twenty fathoms water, steer **NE.** by **E.** $\frac{3}{4}$ **E.** This course leads clear of all dangers, up mid-channel (with not loss than eleven fathoms) between Franklin Island and Crane Island, and joins the eastern channel about half a mile to the eastward of Otter Island. When the southern end of Otter Island bears **W.** $\frac{1}{2}$ **N.**, with eleven fathoms water, steer **NE.** by **N.** $\frac{1}{2}$ **N.**, and proceed as directed for the eastern channel, (page 331.) On this northeasterly course there will be nothing less than six and a quarter fathoms water.

MEDOMAK RIVER.

This river, as before mentioned, (see page 325,) enters between Martin's Point on the east and Hog Island on the west, and is two miles and a half wide at its mouth. It is full of islands, which divide the entrance into several channels. There are also several islands lying in the approaches to the river, in the northern part of Muscongus Bay, which will require mention in this place. Of these the largest and most important lies on the eastern side of the approach, just to the northward of Cranberry Island, and is known as Friendship Long Island. This island extends in a **NE.** and **SW.** direction and is two miles long. Its surface is hilly and diversified with cleared and wooded lands. The highest point is about the middle of the island, where the summit is over one hundred feet high and thickly wooded. Friendship Long Island separates Meduncook River from Medomak River. The long cove (with good water) making in along its northwestern shore is called **Friendship Harbor**, and to the westward of that harbor is another, called Hatchet Cove.

Friendship Long Island.

A narrow passage leads into Meduncook River from Friendship Harbor, between the northern point of Friendship Long Island and a small island to the northward and eastward, called Garrison Island. This passage at high water is two hundred and fifty yards wide, but the channel at low water is only seventy yards between the lines of three fathoms. The best water is in the middle of the passage. There is no passage between Garrison Island and the mainland.

Garrison Island.

The entrance to Hatchet Cove is between Jameson's Point on the east and Martin's Point on the west. A group of small and bare islets extends in a **NE.** direction up the middle of this cove from its entrance half way to its head. The first one met with on entering the cove is called **Ram Island**; the remainder are known generally as the **Sand Islands**,—being at low water joined together by dry ledges. The channel into the cove passes to the westward of these islets, hugging the western shores very closely. The shores of Hatchet Cove present the same appearance as those adjacent, being high and hilly, partly cleared and under cultivation and partly wooded. The western side of the cove is the most thickly settled. The land rises gradually to a height of one hundred feet, and is partly cleared and settled and partly wooded with pine trees. Behind the clearings, however, and to the westward, thickly wooded hills appear, rising a hundred feet above sea-level, and covered to their summits with spruce and pine. These hills are on the eastern shore of Medomak River.

Hatchet Cove.

Jameson's Point, the eastern point of entrance to Hatchet Cove, and on the western side of the entrance to Friendship Harbor, is cleared and partly under cultivation. There are one or two pine trees near its southern end. The land rises gradually from this point to the summit, which is sixty feet high, and has several houses on it.

Jameson's Point.

Martin's Point, which is the western point of entrance to Hatchet Cove as well as the eastern point of entrance to Medomak River, is only twenty feet high, and thickly wooded. The land to the northward and eastward is partly bare and partly wooded; and half a mile above the point is a round hill eighty feet high, wooded with oak and pine to its summit.

Martin's Point.

On the western side of the approach to Medomak River, after passing Ross Island, will be seen the southern extremity of that large, well wooded, and partly settled island, called **Muscongus Island**,—a description of which properly belongs to the approaches to Muscongus Sound. It lies **N NE.** and **S SW.**, and is a little over two miles and a half long. Off its eastern side, and just above its southern end, lies Marsh Island, extending **N.** by **E.** and **S.** by **W.**, five-eighths of a mile long and about one-fifth of a mile broad. Its surface is low, being in no place higher than fifty feet above the sea, and is almost entirely bare of trees. Its few trees are upon the western side, near the southern end, and there are two or three houses near the northwestern end. Two hundred yards **W.** from its southern end is a small island, about one hundred yards in diameter and partly wooded, called **Thrumbcap Island.**

Marsh Island.

Between the western shore of Marsh Island and the eastern side of Muscongus Island is contained a snug little anchorage, called Marsh Harbor, with from three to eight fathoms at low water, somewhat open to the southward, but easy of access even to strangers. This harbor may be entered from the northward by rounding the northern end of Marsh Island close to; but the passage is narrow and much obstructed.

Marsh Harbor.

To the eastward of the centre of Muscongus Island, about half a mile distant, lies a low, rocky island, called **Killick-Stone Island**; and nearly a quarter of a mile **E.** of this is another islet, twenty feet high, and three hundred yards long, known as Thief Island. There are three or four small groves of spruce trees on it. It is sometimes called **Little Round Island.** **Thief Island.**

Off the northeastern end of Muscongus Island, distant about two hundred yards from shore, lies another low islet, rocky and wooded, called Indian Island. There is a narrow passage between it and Muscongus Island, through which twelve feet at mean low water may be taken; but it is not advisable to attempt it. **Indian Island.**

Hog Island, which forms the western side of the entrance to Medomak River, lies just to the northward of Muscongus Island, from which it is separated by a narrow passage, three-eighths of a mile wide, through which five feet at low water may be taken into Muscongus Sound,—crossing a shoal which extends from island to island, and is known as **Muscongus Bar.** The bottom on this bar is soft and grassy, with scattered rocks here and there. Hog Island is nearly a mile and a half long, and lies **NE.** by **N.** and **SW.** by **S.**,—its northern end being separated from the southern point of Hockomock by a passage two hundred and fifty yards wide, called **The Lower Narrows.** Through this passage thirteen feet at low water may be carried into Muscongus Sound. The island is of moderate height, being nowhere more than sixty feet high, partly wooded, but in many places bare of trees. The eastern face rises gradually to the crest of the hills; the western face is somewhat more bluff and precipitous. The southern point of the island is low and wooded with spruce. The northeastern end is also wooded, but the summit of the island has only scattered groves of trees. **Hog Island.**

In the middle of the entrance to Medomak River the space is occupied by two islands lying **N NE.** and **S SW.** from each other, with a passage between them over five hundred yards wide. The most southern island, called **Cow Island**, lies **NE.** and **SW.**, and is nearly three-quarters of a mile long, only of moderate height, and wooded with the usual growth of spruce trees. It is separated by a channel between five and six hundred yards wide from Bremen Long Island, which island lies **N.** by **E.** and **S.** by **W.**, occupying about the middle of the river. It is a little over two miles long, high and rocky, and traversed in a **N.** and **S.** direction by a chain of hills, varying in height, but highest near its southern end, which is separated by a small cove into two points. The eastern point is forty feet high, bare of trees, and cultivated, with several houses upon it. The western point is low and wooded with spruce. The eastern face of the island is also the steepest. There are houses and patches of clearing scattered along both eastern and western shores, but the summits are generally thickly covered with trees. **Bremen Long Island.**

Between Hog Island and Bremen Long Island the middle of the passage is occupied by a line of dry rocks surrounded by shoal water. The southernmost of these rocks lies **E.** from the middle of Hog Island, distant about three-eighths of a mile, and thence they extend due **N.** for three-quarters of a mile to within two hundred and twenty-five yards of the southwestern extremity of Oar Island. Five fathoms at low water may be taken between Oar Island and the northern end of this ledge. There is good water to the westward of these rocks, between them and Hog Island.

The channel to the westward of Bremen Long Island, leading into Medomak River, is much the best; for although much obstructed at the southern end, it is straighter, wider, and has deeper water than the Eastern Passage. It passes along the western side of Cow Island, between it and Hog Island on the west; runs about **N NE.** along the western side of Bremen Long Island, between it and a small island on the western side of the river, called Oar Island; then about **NE.** by **N.** through a narrow but deep channel embraced between Bremen Long Island on the east and the peninsula of Hockomock on the west, called Hockomock Channel; and joins the Eastern Passage at the northern end of Bremen Long Island. There are many ledges and rocks in the southern part of this channel, but there is plenty of water; and by using it vessels avoid the sharp turn around the northern end of Bremen Long Island, where, with a strong tide-way, it is almost impossible to make the course good past Jones' Point. Hockomock Channel is wider than Flying Passage, (on the eastern side of Bremen Long Island,) and, its course being nearly the same as that of the tidal current, enables vessels easily to avoid the ledges on either hand. **Western Passage of Medomak River.**

The channel to the eastward of Bremen Long Island is wide, deep and clear until you approach the northern end of the island, when there will be seen another island in the middle of the passage and two or three islets to the eastward of the first. The largest island is called Hungry Island,—the channel running between it and Long Island,—and lies between five and six hundred yards to the eastward of Long Island. The channel between them is called **Flying Passage**, and is the continuation of the Eastern Passage of Medomak River. Off the northeastern point of Long Island it is very narrow,—two ledges making out from the eastern and western shores, leaving a channel only about eighty yards wide with over four fathoms water. **Eastern Passage of Medomak River.**

Hungry Island will appear as a narrow and wooded island, rising gradually to a bare summit about eighty feet high. As it is passed, however, it will be seen to be long and narrow, extending about **N NE.**, a mile in length. Much of its surface is free from trees and partly cultivated. The northern and southern ends are wooded with a variety of trees,—pine, as usual, predominating. The centre and northeastern faces are cleared and cultivated. In the middle of the island the land is only forty feet high,—the highest land being near the northern and southern ends,—the former rising to seventy and the latter to eighty feet above high-water mark. **Hungry Island.**

Wharton Island lies two hundred and seventy-five yards to the eastward of Hungry Island. The channel between has fourteen feet at low water and leads into Back River Cove, and thence into Medomak River again. Wharton Island is low and thickly wooded, and will appear from the southward as a very narrow, wooded, rocky islet. **Wharton Island.**

One hundred and twenty-five yards to the northward and eastward of Wharton Island is a low and sparsely-wooded island, called **Wolsgrover Island**, connected at low water with Wharton Island. These two islands form the western side of a long narrow cove, making in between them and the eastern shore of Medomak River, called Delano's Cove. Seven feet at low water may be taken from the head of this cove, through a narrow passage between the mainland and the northeastern point of Wolsgrover Island, into Back River Cove.

Delano's Cove.

The eastern shores of Medomak River thus far are high, steep and thickly wooded. The highest hill, called **Delano's Hill**, is one hundred and eighty feet above sea-level. It lies near the head of the cove, and is wooded to its summit except on its northern side, which is cleared.

Passing through Flying Passage a neck of land extending about **NE.** is seen ahead. Its southwestern and northwestern ends are wooded and its centre cleared, with two or three houses near the highest part. The land rises gently from both ends towards the summit, which is only fifty feet high and bare of trees. This is Jones' Neck. It is a peninsula five-eighths of a mile long, connected with the mainland at its northeastern extremity by a very narrow and low neck, over which may be seen two small islands lying to the northward. Thus Jones' Neck looks like an island when viewed from a distance.

Jones' Neck.

The mainland to the eastward of Jones' Neck, rising to a height of seventy feet, and thickly wooded, forms the northern shore of a wide passage called Back River Cove, the southern side of which is formed by Hungry, Wharton and Wolsgrover islands. Into this cove empty two rivers,—the southern one a mere creek, called **Goose River**, the other a small stream, bare at low water, called **Back River.**

Back River Cove.

The southwestern point of Jones' Neck is called **Jones' Point.** The Eastern Passage runs to the westward, between it and the northern point of Bremen Long Island, where it joins the upper part of the Western Passage, known as the Hockomock Channel.

In the Western Passage, just above the northern end of Hog Island, and about opposite the middle of Bremen Long Island, lies Oar Island, extending **NE.** and **SW.**, and a little over half a mile long. Its highest point (near its northeastern end) is but thirty feet above high-water mark, and well wooded with a variety of trees; but both the southern and northern ends are quite bare. It is separated from the western shore of the river by a passage, called **Keene's Narrows**, only ninety yards wide at its narrowest part and dry at low water. The southeastern shore of Oar Island is tolerably bold. The western side of Bremen Long Island is, on the contrary, fringed with a line of islets, bare rocks and reefs, dry at low water, extending from its southern end along the shore nearly to its northern point. They lie at various distances from the shore, from three-eighths of a mile to a hundred yards; and there is no passage between them and Long Island except at high water.

Oar Island.

About a mile above Oar Island the Western Passage, between Long Island and the mainland, narrows very much, and from this point to where it joins the Eastern Passage it is called Hockomock Channel. In its narrowest part (about a third of the distance from its southern entrance to its northern end) it is about three hundred yards wide; but at this same point the channel between the lines of three fathoms is only one hundred yards wide, with a strong tidal current setting through, especially during ebb tide. The western shores of Bremen Long Island, which form the eastern boundary of this channel, are lower than the eastern shores, and mostly cleared land. The land rises very gradually, not attaining its highest point (one hundred feet) until about midway between the eastern and western shores of the island.

Hockomock Channel.

On the other side of the channel Hockomock Peninsula presents a gently sloping shore, in some places wooded and in others cleared and cultivated. To the westward the land rises to a thickly wooded crest one hundred and twenty feet high. These woods are mostly spruce, pine and hemlock; but a variety of trees line the shores.

Hockomock Peninsula.

The northeastern point of Hockomock Peninsula is called **Heath Point**, and here the shore turns abruptly to the westward and runs for about three-quarters of a mile **W SW.** Then it turns as abruptly as before,—running **N.** by **E.** for three-quarters of a mile; and thence holds a general course about **E.** (though much interrupted by creeks and branches) for a mile, and then takes a turn to the southward to Havenner's Point. Thus is formed a large but shallow cove, called Broad Cove, nearly all dry at low water. On its northern and eastern shores it receives three creeks or branches,—Western Branch, Eastern Branch, and Havenner's Cove. **Western Branch** empties into the northwestern corner of the cove and is dry at low water; **Eastern Branch** comes in at the northeastern corner, is nearly half a mile wide at its mouth and three-quarters of a mile long, with a general course about **N NE.** Eight feet at mean low water may be taken up this creek half a mile from its mouth. **Havenner's Cove** opens out of the eastern side of Broad Cove and is dry at low water.

Broad Cove.

Nearly in the middle of the entrance to Broad Cove, but nearest to Havenner's Point,—bearing from the latter about **SW.**, distant nearly one hundred yards,—lies Johnson's Island, a low island, with a very few scattered trees upon it. It lies **N NE.** and **S SW.**, and is nearly a quarter of a mile long. Off its southern end lie a number of bad sunken ledges called **Johnson's Island Rocks.**

Johnson's Island.

When past Jones' Point, at the junction of the Eastern and Western passages, a small island is seen in mid-river to the northward, called Miller's Island. It is low and bare, and a little over two hundred yards long. It bears **S. by W.** from Havenner's Point, distant a little over a quarter of a mile, and there is no safe passage between it and the point,—the space being occupied by sunken ledges with from five to ten feet water upon them, except near

Miller's Island.

the northern end of the island, where a narrow slue, with three fathoms in it, leads between the southernmost of the sunken ledges and Miller's Island.

Havenner's Point, the northeastern point of entrance to Broad Cove, is the southern extremity of a large peninsula called Dutch Neck, forming part of the western shore of the river. From the point the land rises gently to the northward until it attains a height of one hundred feet; and is thickly wooded except on the southern slope, which is cleared and has one or two houses on it. **Havenner's Point.**

As before remarked, the eastern and western passages of Medomak River unite abreast of Jones' Point; and thence the channel of the river continues to the northeastward, and is almost entirely unobstructed until you come up with a small rocky islet, about one hundred yards long, which lies three-quarters of a mile **NE.** from Miller's Island and four hundred and fifty yards **N.** by **E.** from **Locust Island,** (the westernmost of the two islands north of Jones' Neck.) This islet is called Havenner's Ledge. It is nearly in mid-river, and there is no passage to the westward of it. **Havenner's Ledge.**
To the southward, ledges dry at low water extend nearly over to Locust Island; and the channel is further narrowed by rocks lying off the northern end of that island, so that it is here only about forty-five yards wide between the lines of three fathoms. To this part of the channel has been given the name of **The Narrows.**

The western shores of the river (here called Dutch Neck) are hilly and undulating and tolerably well settled. Nearly the whole neck is cleared and cultivated, even to the summits of the hills, which are in no place, however, over one hundred and forty feet high. The eastern face of the neck slopes gradually towards the river until it is only about twenty feet above high-water mark, when it falls precipitously to the water. **Dutch Neck.**

Pitcher's Point is a mile and a quarter above Jones' Neck, on the eastern bank of the river,—the shores between being thickly wooded, and rising gradually from the water to the height of sixty feet. Pitcher's Point is, however, low and wooded with pine and oak. It forms the southern point of the entrance to a small shallow cove called **Pitcher's Cove.**

When abreast of Pitcher's Cove you will open Long Cove, also on the eastern side of the river, running **NE.**, and bare at low water. The southern and eastern shores of Pitcher's Cove are partially cleared and settled; the northern shore is wooded. The southern shore of Long Cove is also wooded, but the western side is cleared, and the northern shore partially so. The crests of the hills back of both coves are completely cleared and tolerably well settled. **Long Cove.**

Farnsworth's Point, the northern point of entrance to Long Cove, is three-quarters of a mile **NE.** by **N.** from Pitcher's Point. It is low and thickly wooded, but the crest of the point is cleared.

From Farnsworth's Point to Hollis' Point, also on the eastern bank of the river, the trend of the shore is **N.** by **W.** ½ **W.**, and the distance one mile and an eighth. Hollis' Point is the northern point of entrance to **Sampson's Cove,** which makes in to the southward and eastward of it about half a mile in a **NE.** direction, and is bare at low water. **Hollis' Point.**

The eastern shore of Medomak River from Long Cove to Sampson's Cove presents a cleared surface interspersed with patches of woodland, (now mainly oak, birch, &c.) The land rises gradually to the summit of the hills, which are generally crowned with houses. Both shores of Sampson's Cove are cleared and settled; and from Hollis' Point to Waldoboro' the land on both sides of the river is entirely under cultivation, and houses are more thickly clustered until up to the town itself.

On the western shore of the river, nearly three-quarters of a mile **NW.** by **W.** from Hollis' Point, is **Woltz' Point.** It is low and bare, and with the whole of the surrounding land is under cultivation. Woltz' Point is the northeastern extremity of Dutch Neck. From this point the shore (on the western side of the river) turns abruptly to the westward, running about **NW.** ½ **W.** for five-eighths of a mile to **Meeting House Cove,** a narrow arm of the river, bare at half-tide, and having a general course into the land about **SW.** From its northern point of entrance the general course of the western bank is **NE.** ½ **N.,** one mile and three-quarters to Waldoboro'. **Meeting House Cove.**

Hoffse's Point lies on the northeastern side of Medomak River, about one mile above Hollis' Point and nearly opposite to the mouth of Meeting House Cove. From Hollis' Point to Hoffse's Point the shore runs about **W NW.,** but at the latter point it turns abruptly, and runs first about **N.,** and then **NE.** by **N.,** a little over a mile and a half to Waldoboro'. Hoffse's Point is wooded; but beyond it the eastern bank of the river is cleared, cultivated and well settled. **Hoffse's Point.**

Waldoboro' is a town of two or three thousand inhabitants. It occupies the eastern bank of the river, which, at the town, is quite narrow, and bare at low water; but a bridge sixty yards long connects the town with the settlement on the western bank. There is considerable ship-building here.

DANGERS

IN APPROACHING AND ENTERING MEDOMAK RIVER.

I. ***From the Eastward through Muscongus Bay, and entering the river by the Eastern Passage.***—Coming from this direction, pass to the southward of Allen's Island and between it and Monhegan; or, if coming from any great distance to the eastward, pass to the southward of Monhegan. In either case the courses lead to the southward of Little Egg Rock and Eastern Egg Rock, and between this latter islet and Western Egg Rock.

Passing to the westward of Eastern Egg Rock, you will open to the northward a large but low, wooded island, with a smaller, nearly bare island in range with it. These are **Harbor Island** and **Crane**

Island. Still farther to the westward will appear a low round islet, thickly wooded with oak and pine. This is **Wreck Island**, and the channel passes between it and Harbor Island.

Franklin Island Shoals bound the eastern side of this passage; *Western Egg Rock Shoals* lie on its western side. Passing these, you leave *The Devil's Back* to the westward and Crane Island to the eastward; then ahead, and nearly in mid-channel, is a rock with ten feet at mean low water, called Harbor Island Rock, lying off the western shore of Harbor Island, distant about six hundred yards from shore. Eleven fathoms may be carried between it and Harbor Island by keeping about three hundred yards from the latter. The widest channel, however, is between Wreck Island and the rock, where it is six hundred yards in width. This rock is not buoyed.

Harbor Island Rock.

Wreck Island Ledges. To the northeastward of Wreck Island, three hundred and fifty yards distant, lies a small bare rock, about one hundred yards in diameter; and **E NE.** from this rock another of about the same size. Shoal water surrounds both rocks, and extends from one to the other, so that vessels must not attempt to go between them. They may be approached on their eastern side within one hundred and fifty yards with six fathoms water, and are called Wreck Island Ledges.

Passing Wreck Island Ledges, if bound up through Flying Passage, or into Hatchet Cove or Friendship Harbor, the channel passes between Black and Cranberry islands on the east and **Jones' Garden** on the west. There are no rocks or ledges in the channel-way, but Jones' Garden is surrounded by shoals. *Bad ledges, with dry rocks and rocks awash at low water,* extend **N.** from the island two hundred and fifty yards; **NE.** for the same distance; and **E.** for two hundred yards.

On the southwestern side of Jones' Garden, at a distance of two hundred yards, is the northern end of a long ledge, called Garden Island South Ledge. It is nearly three hundred yards long **NE.** by **N.** and **SW.** by **S.**, and has two feet at mean low water. A red spar-buoy (No. 2) is placed off its southwestern end in four fathoms at mean low water, and vessels using this channel pass to the eastward of it, notwithstanding its color. Vessels passing from St. George's River to the Medomak, or the reverse, use the channel which leads south of Otter Island, between Cranberry and Harbor islands, and between Wreck Island and Jones' Garden, and must give the last-named island a berth of between five and six hundred yards to the northward. Vessels entering Medomak River through the western channel must leave Jones' Garden three hundred and seventy-five yards to the eastward.

Garden Island South Ledge.

All of the ledges surrounding Jones' Garden are known under the general name of *Garden Island Ledges.*

A sunken rock, with twelve feet at mean low water, lies a quarter of a mile **NW.** from the southwestern point of Cranberry Island. After passing this the channel is clear until up to the Gull Rocks, two small bare islets, connected at low water, lying close together, seven-eighths of a mile **N. ½ W.** from the southwestern point of Friendship Long Island and nearly half a mile **SW. ½ S.** from Martin's Point. They may be passed on either hand by giving them a berth of one hundred and twenty-five yards. Bound into Hatchet Cove or Friendship Harbor, pass to the eastward of them; bound into Medomak River, pass to the westward.

Gull Rocks.

In Friendship Harbor there are no obstructions after passing Gull Rocks; but you may stretch boldly to within one hundred and fifty yards of Ram and Sand islands on the western side, and to within one hundred and seventy-five yards of Friendship Island on the eastern side, until up with Jameson's Point, off which the shoal water extends to the southwestward nearly four hundred yards and to the southward two hundred and fifty yards. From this point to the head of the harbor both shores are flat and cannot be closely approached.

Martin's Point should receive a berth to the northward of two hundred and fifty yards from vessels bound into Friendship Harbor or Hatchet Cove.

The Eastern Passage of Medomak River, after passing Gull Rocks, leads between Cow Island and Bremen Long Island on the west and Martin's Point and the mainland north of it on the east. The channel is wide, deep, and almost entirely unobstructed. Two hundred and seventy-five yards to the westward of Martin's Point there is *a small pinnacle rock, awash at mean low water and bare at low springs.* It bears from Gull Rocks **N.** by **E. ¼ E.,** distant five-eighths of a mile. Three-eighths of a mile **N NE.** from this rock *is another with three feet water,* which lies in the mouth of a small cove making in between the mainland and a small wooded island connected with it at low water. This rock is two hundred yards from shore and three hundred and fifty from the southern end of the small island; and shoal water extends from it over one hundred yards to the westward. In beating, to avoid this rock give the eastern shore a berth of four hundred yards.

There is *a fourteen feet spot* lying **E.** from the southeastern point of Bremen Long Island, over six hundred yards distant.

After passing these obstructions no further dangers are met with until near the passage between Hungry Island and Bremen Long Island, called Flying Passage. Here give the southwestern end of Hungry Island a berth of two hundred yards to avoid the shoals extending to the southward and westward from it.

At the northern end of Bremen Island the shoals extend to the eastward two hundred and fifty yards, and are for the most part *dry at low water;* and from Hungry Island, exactly opposite to the northern end of Bremen Island, they extend over two hundred yards to the westward, also *dry at low water*. Thus the channel is contracted to a width of only seventy-five yards, through which, especially during ebb-tide, the current rushes with great velocity. ***Dangers--Medomak River.***

After passing between these two ledges there is found, to the westward, *another bad shoal, partly dry at low water,* which lies three hundred yards due **E.** from the northern point of Bremen Long Island. Its eastern side may be approached within seventy-five yards, but in passing to the northward it must be left two hundred and fifty yards to the southward.

Another large shoal, with three feet at mean low water, lies in the middle of the western entrance to Back River Cove, exactly in line between the northern end of Hungry Island and the southern point of Jones' Neck. It lies **NE.** by **E.** and **SW.** by **W.**, and is a quarter of a mile long. There is a channel with over three fathoms on each side of it. This shoal is left about two hundred yards to the northward and eastward by those bound up Medomak River,—the course, as soon as you are through Flying Passage, leading to the westward, between Jones' Neck and Bremen Long Island. When between these two islands, this channel unites with the Western Passage or Hockomock Channel.

After passing the shoal which lies **E.** from the northern end of Bremen Long Island, (giving the northern point a berth of over four hundred yards,) haul in to the southward, to avoid *a bad shoal which extends off from Jones' Neck* three hundred and fifty yards in a southerly direction, with from seven to fifteen feet water, and two hundred and fifty yards in a southwesterly direction, *dry at low water.* When up with this shoal, the southern side of the channel is bounded by *a long ledge which makes out in a* **NW.** *direction* from the northwestern point of Bremen Long Island nearly three-eighths of a mile, or seven hundred yards. After passing between these two shoals there are no more obstructions until you are near the northern end of Jones' Neck, where there is *a shoal with fourteen feet,* two hundred and seventy-five yards from shore. Above this the first obstruction met with is Havenner's Ledge.

Three-quarters of a mile **NE.** from Miller's Island, and four hundred and fifty yards **N.** by **E.** from Locust Island, (the westernmost of the two islets north of Jones' Neck,) is a bare rock, about one hundred yards long, called Havenner's Ledge. It lies nearly in mid-river; and from it the dry shoals extend to the northward to the shores of Dutch Neck, and to the southward nearly three hundred yards, or to within one hundred and sixty yards of the northern end of Locust Island. From this latter island *ledges extend to the northward one hundred and fifty yards,* thus narrowing the channel to a width of only forty-five yards. To the eastward of the rocky islet forming the middle of Havenner's Ledge the shoals extend four hundred yards; so that vessels after passing the southern point of the ledge must hug the eastern shore to avoid it. But on the western side of the rock the ledges are bold; and a long cove is formed between these shoals on the east and the western shore of the river on the west, in which there is good anchorage in from three to four fathoms, protected from all except southerly winds. ***Havenner's Ledge.***

Neither this ledge nor any other of the obstructions in Medomak River have been buoyed by the Light-House Board. It has been considered that no stranger would attempt to pass up this river without a pilot, (as indeed none should through the Eastern Passage,) and buoys were therefore considered unnecessary. As, however, the Western Passage is by no means difficult of access, especially with a fair tide, a system of buoys has been suggested for the river, among which one is proposed on the southern point of Havenner's Ledge and one on the northern point of the ledge north of Locust Island. Thus the exact width of The Narrows will be marked, and vessels need only keep midway between the two buoys.

After passing Havenner's Ledge and you are through The Narrows the channel runs between *large flats, in many places bare at low water,* which make off from both shores. The western edge of the channel is marked by stakes which extend nearly to Hoffse's Point. These stakes are all on the western side of the channel with the exception of two—one off Hollis' Point, close to the shore, and one about a quarter of a mile below Hoffse's Point, directly opposite to the last stake on the western side of the channel, which is off Woltz' Point. These have been all placed by private enterprise. The staking of the eastern side of the channel has also been recommended.

Above Woltz' and Hoffse's points there are no stakes. The channel has less than six feet at low water, and runs between dry mud-flats all the way to Waldoboro'. It is only practicable at high water, and then only with a pilot.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MEDOMAK RIVER.

I. ***From the Eastward, through Muscongus Bay, and entering the river by the Eastern Passage.***—When to the westward of Allen's Island, bring Pemaquid Light-house to bear **W.** by **N.** ¼ **N.** and steer for it until Franklin Island Light-house is brought almost on with the eastern side of Eastern Egg Rock, and you are in nineteen fathoms, hard bottom. Now steer **N.** ¾ **E.**, carrying not

Sailing Directions---Medomak River.

less than nine fathoms, until Franklin Island Light-house is brought in range with the middle of Crane Island on a bearing of **SE.** by **S.**, with eighteen fathoms, and you are between Harbor and Wreck islands and near Harbor Island Rock, which will be to the northeastward. Now steer **NE.** ½ **N.** for about seven-eighths of a mile, carrying not less than eleven fathoms; and, if bound up the river, when the northern end of Hall's Island bears **SE.** ½ **E.**, (exactly abeam,) steer **N NE. Northerly** towards Hungry Island, carrying not less than six and a half fathoms. When within three-quarters of a mile of the island, in seven and a half fathoms, the northern end of Bremen Long Island will be seen a very little open to the southward of Jones' Point and bearing **N.** ½ **E.** Steer that course, carrying not less than five fathoms, and be careful not to bring the points in range nor to open them too widely. With the flood-tide the tendency will be to open them, and therefore you must keep a starboard helm. Keep this course and range until you are about a quarter of a mile to the northward of the southern point of Hungry Island and abreast of the entrance to the cove on the eastern side of Bremen Island, when the narrows of Flying Passage will be open to the northward; and with a fair wind and a good knowledge of the positions of the ledges you may shoot the passage with safety. The least water on this course is four and a half fathoms; but a stranger must not attempt this passage, at least so long as the numerous ledges are not buoyed. At young flood, when the most dangerous shoals show themselves, it might, perhaps, be safely done; but it is not advisable.

The above courses into Medomak River pass three hundred and fifty yards to the westward of Egg Rock South Ledge; a quarter of a mile to the westward of Eastern Egg Rock; about five hundred yards to the westward of Egg Rock North Ledge; three-eighths of a mile to the westward of Midway Rocks; over half a mile to the westward of Hough's Ledge; an eighth of a mile to the westward of Harbor Island Rock; and five hundred yards to the westward of Gull Rocks.

Bound into Friendship Harbor.—When Franklin Island Light-house is in range with the middle of Crane Island on a bearing of **SE.** by **S.**, (as before,) **NE.** ½ **N.** will lead, with not less than seven fathoms, up to the entrance. When past Gull Rocks, and the middle of the harbor bears **E.** by **N.** ⅛ **N.**, that course will lead safely in, and you may anchor in from three to five fathoms.

The course through Flying Passage is **NE.** by **N.** ½ **N.**, keeping exactly in the middle of the stream. Being through the passage, bring the western point of the northern end of Bremen Long Island to bear **W.** by **S.**, when the northern point of the long shoal lying on the southern side of the channel will be exactly in range with the point. Then steer **W NW.** for a white house on the western shore of the river, which cannot be mistaken, for there is no other near it. On this course there will not be less than three fathoms, and when the southern end of Miller's Island bears **N.**, steer **N.** ¼ **E.** until abreast of that point and about two hundred yards from the island. Now, in mid-channel, with about eight fathoms water, steer **NE.** with the dry rock of Havenner's Ledge a little to the eastward. When up with the entrance to The Narrows, and in about seven fathoms water, the northern end of Locust Island will bear **SE.** ½ **E.**, and the course will be **E.** by **S.** ¼ **S.**, with not less than three fathoms. Here great care must be taken, as the channel is only about forty-five yards in width, and the ebb-tide sets directly on to the ledges off Locust Island and the flood on to Havenner's Ledge. This passage should only be attempted by sailing vessels on the young flood, when the shoals show themselves, and what little tide there is will be favorable, and its set more easily overcome.

After passing The Narrows keep over towards the eastern shore, steering about **E NE.** to avoid the eastern side of Havenner's Ledge. On this course, when Hollis' Point (low and cleared) bears **N.** by **E.** ¼ **E.**, steer **NE.** by **N.** ⅛ **N.** until abreast of Farnsworth's Point; after which track the stakes along as far up the river as they go. The water deepens after passing The Narrows,—over ten fathoms being found off Pitcher's Cove and seventeen fathoms just below it. Not less than three fathoms can be carried up to abreast of Farnsworth's Point, but above that the soundings gradually diminish. Thirteen feet may be carried as far as Woltz' Point, and two feet up to Waldoboro'; but the channel is narrow and crooked.

At Waldoboro' vessels lie alongside the wharves, where they are aground at one-quarter ebb.

Fourteen feet at low water may be taken to the eastward of Hungry Island through a very narrow channel between it and Wharton and Wolsgrover islands, which leads into Back River Cove; and seven feet at low water may be taken to the eastward of Wharton and Wolsgrover islands by keeping the eastern shore of the river close aboard; but neither of these passages is, however, fit for strangers.

DANGERS

IN APPROACHING AND ENTERING MEDOMAK RIVER.

II. ***From the Westward, through Muscongus Bay, and entering the river by the Western Passage.***—Coming from the westward, after passing Pemaquid Point, you may go to the northward or the southward of *New Harbor Sunken Ledges*, which have been already described on page 333. The safest way for strangers is to go to the southward; but, if you have come from the southward and are beating up the bay, look out for Moser's Ledge, a small detached pinnacle rock, which has seventeen feet at mean low water, lies almost exactly in line between Monhegan Light-house and Pemaquid Point, and is only dangerous to vessels of heavy draught. This ledge, although known to have existed for many years, was first developed in the month of June, 1878, by Lieut. Jeff. F. Moser, U. S. N., from whom it has been named. The following bearings and distances may be found useful in avoiding it: From ***Moser's Ledge.***

	Miles.
Monhegan Light-house it bears NW.	5½
Pemaquid Light-house SE. ¾ E.	3¾
Franklin Island Light-house SW. ½ S.	5¼
The black buoy on New Harbor Sunken Ledges S. ¼ E.	2⅞
Western Egg Rock S. by W. ⅞ W.	nearly 4

When well into the bay, and you have passed New Harbor Sunken Ledges, the channel leads to the northward, along the western shore of Western Egg Rock; and when up with this islet there will be abeam a sunken ledge with eight feet at mean low water, bearing about **W NW.**, and called Haddock Island Kelp Ledge. This shoal lies nearly half a mile **S.** from Haddock Island and about a mile **W NW.** from Western Egg Rock, and between it and Haddock Island is a good channel with eight fathoms. A spar-buoy, painted red and black in horizontal stripes, is placed in five fathoms off the southwestern side of the shoal. To avoid the ledge, should the buoy be gone, vessels when stretching towards it should go about in six fathoms water. ***Haddock Island Kelp Ledge.***

Haddock Island Ledge (which is marked by a black spar-buoy (No. 3) placed in thirty feet water off its southern side) is five-eighths of a mile **NE.** from Kelp Ledge, bears **E SE.** from the northern end of Haddock Island, a quarter of a mile distant, and has two feet at mean low water and is awash at low spring tides.

The Devil's Limb and Devil's Elbow are two ledges on the eastern side of the entrance, the first met with on that side after passing Western Egg Rock. The Devil's Elbow is dry at low water, and bears **NE.** by **N.** from Western Egg Rock, one mile distant. The Devil's Limb lies nearly six hundred yards **NW.** from The Devil's Elbow and one mile **N.** by **E.** ¼ **E.** from Western Egg Rock, and is also dry at low water. There is a good channel with eight fathoms water between the two shoals. ***Devil's Limb and Devil's Elbow.***

When up with The Devil's Limb, there are ledges to the northward and one directly ahead. Only one of these will show, except at low water, when the one ahead will break. These three ledges are called Polin's Ledges. They lie to the southward of Marsh Island, and are distinguished as follows: The most easterly is nearly in mid-channel, lying **N.** from The Devil's Limb half a mile, and **SE.** by **S.** ½ **S.** from the southern point of Marsh Island the same distance. It has six feet on it, and good water all around; and is called *Polin's East Ledge*. The most southerly rock, and the first one met with by vessels after passing The Devil's Limb, lies a little over half a mile **S SW.** from the southern point of Marsh Island. It has eleven feet at mean low water, and is called *Polin's South Ledge*. Between this ledge and Pond Island there is a good channel with from six to eight fathoms, which communicates with Marsh Harbor and Muscongus Sound. The northernmost of the ledges is a small bare islet, lying a quarter of a mile to the northward of the southern ledge and three-eighths of a mile **S.** by **W.** ¾ **W.** from the southern end of Marsh Island; and is called *Polin's Dry Ledge*. Shoal water extends from the dry rock **E NE.** and **W SW.**, over three hundred yards each way. Seven fathoms may be safely carried between it and the southern ledge, and five fathoms between it and Marsh Island. These ledges are all on the western side of the channel. ***Polin's Ledges.***

Thrumbcap Island is about a hundred yards in diameter, with a few trees near its northwestern end. It bears **W SW.** from the southwestern point of Marsh Island, two hundred yards distant; and shoal water extends from it to the southward three hundred yards, and is called Thrumbcap Ledge. Two hundred and seventy-five yards **S.** from Thrumbcap Island there is only seven feet at mean low water, and the edge of the shoal is very abrupt. Thus the passage between this and Polin's Dry Ledge is narrowed to one hundred and seventy-five yards between the lines of three fathoms. ***Thrumbcap Ledge.***

After passing Polin's Ledges and Thrumbcap Ledge the channel is clear until you are past Wreck Island, with the exception of *a thirteen feet ledge* which lies three hundred yards **NW.** from Wreck

Island and has good water on all sides of it. After passing it you come to *Wreck Island Ledges*, (already described on page 338,) which leave to the eastward. Abreast of these ledges there is a detached rock, lying on the western side of the channel, called Round Rock.

Round Rock. This rock has twelve feet at mean low water, and bears **SW.** by **S.** from Thief or Little Round Island, distant five-eighths of a mile, (about twelve hundred yards;) **NW.** ½ **N.** from the southernmost of the Wreck Island Ledges, distant nearly three-quarters of a mile; and **N NW.** from the northern end of Wreck Island, distant three-quarters of a mile. There is good water all around it, and it may be passed safely in every direction by giving it a berth of a hundred and seventy-five yards.

The shores of Marsh and Wreck islands are bold-to. Marsh Island may be safely approached within fifty yards; Wreck Island within a hundred and fifty. Little Round Island or Thief Island is also bold-to, except at its southern end, where the ledges make out to the southward nearly two hundred yards and *are dry at low water.*

When up with Thief Island, Jones' Garden and the *Garden Island Ledges* are to the eastward, and have been already described on page 338.

Vessels beating up this channel, after passing to the northward of Thief Island, may stretch from Friendship Long Island on the east to Muscongus Island on the west. But, when nearly up with the small island known as **Indian Island**, which lies off the eastern shore of Muscongus, they must, if passing to the southward of it, give it a berth to the northward of nearly a quarter of a mile; and if passing to the eastward of it, a berth of over three hundred yards. This will avoid *the ledges and shoals which extend from the island in those directions.* But, if passing to the northward of Indian Island, give it a berth of two hundred and fifty yards to avoid *the dry ledge making off from its northern end.*

After passing Thief Island, the next obstructions met with are Cow Island Sunken Ledges, on the eastern side of the channel. They are three in number, and are distinguished as the *North, Middle* and *South Ledges.* The southernmost of the group has three feet at mean low water, and lies three-quarters of a mile **SW.** ½ **S.** from the southern end of Cow Island and one mile **NE.** by **N.** from Thief Island. There is good water between it and the northern ledges; and off its southern side, in four fathoms water, is placed a black spar-buoy, marked No. 1. The Middle Ledge lies three hundred yards **N.** from the South Ledge, and has thirteen feet water. There are six fathoms between them. The northernmost rock is six hundred yards **N NE.** from the southernmost and the same distance **SW.** from Cow Island, and has eight feet at mean low water. The southern end of Cow Island has shoal water extending three hundred and fifty yards to the southward from it. There is, however, a channel with four fathoms between the southern end of this shoal and the northernmost of the Sunken Ledges.

Cow Island Sunken Ledges.

From the western side of Cow Island, and from the small, low, wooded island (called **Calf Island**) lying **W.** from its southern end, dry ledges and ledges bare at low water extend to the westward five-eighths of a mile, (about twelve hundred yards,) thus occupying just half the width of the channel. They are called Cow Island Dry Ledges, to distinguish them from the Sunken Ledges to the southward. These rocks are on the eastern side of the channel.

Cow Island Dry Ledges.

On the western side, directly opposite to Cow Island Dry Ledges, is a small bare rock, surrounded by shoal water, called Coombs' Ledge. It is five-eighths of a mile **E.** from the northern point of Muscongus Island and three-quarters of a mile **N NE.** from Indian Island; and between it and Cow Island Dry Ledges the channel is half a mile wide. The eastern and southern sides of Coombs' Ledge are quite bold, but from its northern end a shoal makes to the northward two hundred and seventy-five yards. Vessels in beating should therefore leave this rock at least three hundred and fifty yards to the southward when passing it on its northern side.

Coombs' Ledge.

Inner Ledge. Inner Ledge lies off the eastern shore of Muscongus Island, near its northern end, at a distance of a quarter of a mile, bearing **W SW.** from Coombs' Ledge, a little over a quarter of a mile distant; and between the two shoals is a channel with five fathoms and about four hundred yards broad. Inner Ledge has five feet at mean low water.

Passing to the eastward of Coombs' Ledge, Cow Island Dry Ledges are reached, which leave to the eastward, giving the westernmost bare rock a berth of from two to three hundred yards. When abreast of this rock a dry ledge will be seen to the westward, making off from the eastern side of Hog Island near its southern end. This is Hog Island Ledge, a dry rock, connected at low water with the shore, from which it is distant two hundred and seventy-five yards. With this exception the eastern side of Hog Island is quite bold.

Hog Island Ledge.

After passing Hog Island Ledge several rocky islets, called Middle Ledges, are seen ahead, in the middle of the river. The southern end of these ledges bears **E.** from the middle of Hog Island, distant three-eighths of a mile, and is formed by the shoal water making off from the southern end of a small low island with a few trees on it. This islet is the southernmost of a group of three, lying **N.** and **S.** from each other, and all connected by bare ledges at low water. All three islets are more or less wooded, and all are surrounded by shoals. The shallow water extends to the northward of the northernmost islet a quarter of a mile, and to the

Middle Ledges.

southward of the southernmost over two hundred yards. Three-eighths of a mile to the northward of the northernmost islet is a low wooded island, about two hundred yards long and surrounded by shoal water. The trees are mainly oak, birch and maple. ***Dangers--Medomak River.***

To the northward of this island the ledges extend nearly three hundred yards towards the southern point of Oar Island, and at the same distance there is *a rock awash at low spring tides.* This rock is only two hundred and twenty-five yards **S.** from Oar Island. Four fathoms may be taken between the southern group of islets and this northern island of the Middle Ledges; but the channel is narrow and unsafe.

A channel with six fathoms, and a little over one hundred yards wide, leads between the southwestern end of Oar Island and the northern point of the Middle Ledges, and then passes between the northern end of Hog Island and Hockomock Peninsula into Muscongus Sound. The passage between Hockomock and Hog Island is called the **Lower Narrows.** Middle Ledges may be approached quite closely on their eastern side, but on no other. The eastern shore of Oar Island is also tolerably bold, and may be approached within one hundred and twenty-five yards with over three fathoms, except at its northern end. At this point a shoal makes out to the eastward nearly three hundred yards.

Along the western shore of Bremen Long Island, which here forms the eastern boundary of this channel, a line of islets extends from near the southern point of the island for about two-thirds of its length. These islets are connected by ledges, some bare at low water, others with from three to ten feet on them; and there is no passage between them and Bremen Long Island. An apparent channel, with from three to seven fathoms, which enters to the eastward of the southern end of these shoals, is only a pocket, and ends in a dry shoal about a mile above its mouth. No particular name has ever been given to these ledges and islets, but they are generally known as Long Island Ledges. They are easily avoided by passing one hundred yards to the westward of the islets, except the northernmost and largest island, called **Clam Island,** which must be left to the eastward two hundred and seventy-five yards to avoid the shoal water making off from its western shore. ***Long Island Ledges.***

After passing Clam Island keep over towards the low bare point to the northward, which makes out from the peninsula of Hockomock. It can be approached within one hundred and twenty-five yards with not less than three fathoms; and when at this distance, keep over towards the middle of the passage to avoid *the shoals and ledges* which line the eastern shore of Hockomock. These dangers extend off from the land to distances varying from one hundred to two hundred and seventy-five yards, and from the bare point before mentioned for three-quarters of a mile to the northward along the shore. As there are also some shoal places along the Long Island shore, the best rule to avoid both is to keep the middle of the passage while passing through its southern half, and then incline towards the eastern side until up with the northwestern point of Long Island; after which hug the Hockomock shore.

From the northwestern point of Bremen Long Island to the point of union of the Eastern and Western passages the eastern side of Hockomock Channel is formed by a long shoal, dry in various places at low water, making out from the northwestern point **N NE.** for half a mile. Nearly nine hundred yards from the point there are only two feet at low water. The name given to these extensive shoals is Northwest Point Ledges; and to avoid them, you must keep the Hockomock shore aboard and steer for Miller's Island. ***Northwest Point Ledges.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MEDOMAK RIVER.

II. ***From the Westward, through Muscongus Bay, and entering the river by the Western Passage.***—With Pemaquid Light-house bearing **N NE.**, distant one mile and a half, with twenty fathoms water, steer **NE.** by **E.** $\frac{3}{8}$ **E.** *Then, intending to pass to the westward of Western Egg Rock,* when Pemaquid Light-house bears **W.** $\frac{1}{2}$ **S. Southerly,** and you are in nineteen fathoms, steer **NE.** by **N. Nearly,** until abreast of Thief Island, which leave to the westward, about four hundred yards off, and steer **NE.** $\frac{1}{4}$ **N.,** carrying not less than six and a half fathoms, and passing between Cow Island and Gull Rocks. On this course, when the passage between Cow Island and Bremen Long Island is fairly open on a bearing of **W.** by **N.** $\frac{1}{4}$ **N.** and the northern point of Cow Island bears **W.** $\frac{7}{8}$ **N.,** with eight fathoms water, steer **N NE. Northerly** for Hungry Island, and follow the directions given for the Eastern Passage of the river.

But, wishing to enter the Western Passage, when abreast of Thief Island, (as before,) steer **N.** $\frac{1}{4}$ **W.,** carrying not less than seven fathoms, until exactly between the southern point of Hog Island and the southern end of Cow Island,—the latter seen over the wooded islet which forms the most southerly of the Dry Ledges,—on a bearing of **W.** by **N.** $\frac{1}{2}$ **N.** and **E.** by **S.** $\frac{1}{2}$ **S.,** with thirteen fathoms water, when steer **NE.** by **N.** $\frac{1}{4}$ **N.** for the westernmost of the Long Island Ledges, (a small round islet with a few trees upon it.) Keep this islet just clear to the westward of the extreme western point of

Sailing Directions---Medomak River. Clam Island, and on this range you will pass over three hundred yards to the westward of the Cow Island Dry Ledges and one hundred and fifty yards to the eastward of the southern point of the Middle Ledges, and will carry not less than seven fathoms. (The best water is close along the southeastern side of these rocks.) On this course, when the southern point of the wooded islet forming the northern Middle Ledge is exactly in range with the northern end of Hog Island, and you are in six fathoms, rocky bottom, steer **N.** by **E.** $\frac{1}{4}$ **E.** until past the westernmost of the Long Island Ledges, and the southwestern end of Oar Island bears **NW.** by **W.** $\frac{1}{2}$ **W.** On this course there will be nothing less than four fathoms. Then steer **NE.** $\frac{1}{8}$ **N.** for the western point of Clam Island, carrying not less than four and a half fathoms, until up with the northeastern end of Oar Island, when steer **N.** $\frac{1}{2}$ **E.**, passing midway between the two islands in not less than four fathoms. When, on this course, the northwestern point of Bremen Long Island bears **NE.** by **E.**, steer **NE.** $\frac{7}{8}$ **E.**, almost exactly for it. (It will be in range with the middle of Jones' Point, and this range will keep clear of the shoals on either side.) Keep this course and range for about three-quarters of a mile, carrying not less than seven fathoms. When abreast of the small cove on the eastern shore, and Miller's Island bears **NE.** by **N.** $\frac{1}{4}$ **N.**, steer that course, which will carry you safely through the passage in not less than seven fathoms; and when the northeastern point of Bremen Long Island bears **SE.** by **S.**, a **NE.** course will lead up to The Narrows in not less than seven fathoms; after which follow the sailing directions given for the river, on page 340.

The above courses pass four hundred yards to the southward and westward of the black buoy on New Harbor Sunken Ledges; half a mile to the westward of Western Egg Rock; three-eighths of a mile to the eastward of Haddock Island Kelp Ledge; about six hundred yards to the eastward of Haddock Island Ledge; four hundred yards to the westward of The Devil's Limb; the same distance to the eastward of Polin's East Ledge; an eighth of a mile to the eastward of Round Rock; and either a quarter of a mile to the eastward or three-eighths of a mile to the westward of Cow Island Sunken Ledges, according as the Eastern Passage or the Western Passage is used.

Wishing to pass to the eastward of Western Egg Rock, continue the course **NE.** by **E.** $\frac{3}{8}$ **E.**, from off Pemaquid Point, until past Western Egg Rock and the centre of the rock bears **NW.** $\frac{3}{4}$ **W.**, between five and six hundred yards off, with eighteen fathoms water. Then steer **NE.** $\frac{1}{8}$ **N.**, carrying not less than six fathoms, until Franklin Island Light-house is brought in range with the middle of Crane Island on a bearing of **SE.** by **S.**, when there will be eighteen fathoms. Now steer **NE.** $\frac{1}{2}$ **N.**, and follow the directions previously given for the river.

The entrance to Broad Cove passes between Miller's and Johnson's islands on the north and the northern side of Hockomock Peninsula on the south; but it is narrow and obstructed by shoals, and no stranger should ever attempt this passage. The chart will be the best guide for the entrance, as no intelligible sailing directions can be given.

It is always hazardous for strangers to attempt the entrance to Medomak River by either passage; but in cases where such action becomes necessary the above directions for the Western Passage will be found to lead clear of all the dangers if due attention be paid to keeping the ranges. The passage should be attempted by sailing vessels only with a fair tide; as in the Hockomock Channel the ebb current runs with great velocity, and disaster might ensue if the vessel should not be able to stem the current. There is no anchorage in this narrow passage, the bottom being hard, with from six to twelve fathoms, (not affording good holding-ground,) and the tidal-current being apt to tail on to one of the numerous ledges on all sides. It is, therefore, best to enter on young flood, when the current is comparatively weak and nearly all of the ledges show themselves.

After passing The Narrows the current is weaker and the channel easily tracked by following the stakes.

The mean rise and fall of tides in both Meduncook and Medomak rivers is ten feet.

Vessels wishing to enter Medomak River coming from St. George's River use the passage which leads along the southern side of Otter Island and between Harbor and Cranberry islands. This is a wide and deep channel, and is obstructed only by two pinnacle rocks, one with thirteen and one with seventeen feet, which lie in mid-channel between Cranberry and Hall's islands. The *seventeen feet rock* lies three hundred yards **N.** by **E.** from the northern end of Hall's Island; and the *thirteen feet rock* lies three hundred yards **NE.** by **E.** from the seventeen feet rock, or nearly sixh undred yards **N NE.** from Hall's Island. The channel between them has eleven fathoms.

To pass from St. George's River into Medomak River by this passage.—When abreast of Jenks' Ledge buoy, pass four hundred yards to the northward of it and steer W. by S. ¾ S. for the bare islet south of Hall's Island. On this course there will not be less than ten fathoms; and when the southwestern point of Otter Island bears N. ¾ E., about three-eighths of a mile off, and the northern point of Harbor Island W. ¾ N., with ten fathoms water, steer W. by N. ½ N., leaving Cranberry and Black islands to the northward and Hall's and Harbor islands to the southward, carrying not less than ten fathoms. This course leads between the thirteen and seventeen feet rocks, in eleven fathoms water; and when you are to the westward of them, Franklin Island Light-house opens to the westward of Hall's Island. Keep this course until you are about a quarter of a mile from Wreck Island Ledges and in about eleven fathoms. Then Jones' Garden will bear N. by E. ¼ E. and the northernmost of the Wreck Island Ledges W., and you must steer NW. by N. until the southern point of Thief Island bears W. ¼ S., about a quarter of a mile distant, with thirteen fathoms; when steer N. ¼ W., and proceed as before directed. *Sailing Directions---Medomak River.*

MUSCONGUS SOUND.

This body of water, which affords a good roadstead for vessels, and out of which open several good harbors, lies along the western shore of Muscongus Bay. It is contained between Muscongus and Hog islands on the east and Pemaquid Neck on the west, and its entrance is three-quarters of a mile wide, but obstructed by several ledges. After passing these obstructions the channel-way is nearly clear to Muscongus Harbor, three miles and a half from the entrance to the Sound. This is a most excellent channel, with few ledges, and those easily avoided. Muscongus Sound runs NE. by N. and SW. by S., and is four miles and a quarter long from its mouth to the southwestern point of Hockomock Peninsula. Here it terminates in a long and shallow cove, which runs NNE. one and a half miles farther, and is called **Greenland Cove.**

The western shores of Muscongus Sound begin on **Pemaquid Neck,** at a wooded point known as Brown's Head. The land here rises to a height of one hundred and forty feet, and is thickly wooded to its summit with oak, birch, &c., interspersed with pine and hemlock. Three-eighths of a mile to the northward of the head is a small cove called **Brown's Cove.** At the head of this cove is a small clearing, and a few houses on the shore. Thence the land is thickly wooded for a mile to another small clearing a quarter of a mile above, which is the site of a large porgy-oil factory. **Brown's Head.**

About two miles and a half above Brown's Head, on the western shore of Muscongus Sound, is the southern point of entrance to Round Pond Harbor, a semicircular cove, about three-eighths of a mile in diameter, affording good and convenient anchorage in all winds, with from thirteen to eighteen feet at low water, soft bottom, and good holding-ground. Its shores are low and cleared, and the village of **Round Pond** occupies the western and northern sides of the harbor. **Round Pond Harbor.**

Northward of Round Pond the shore stretches in the same general direction (NE. by N.) for nearly a mile and a half to another cove, called Muscongus Harbor. The land is cleared for a few hundred yards to the northward of Round Pond, then thickly wooded to within half a mile of Muscongus Harbor; thence to the southern shore of the latter is cleared land backed by trees,—the crest of the hill being thickly wooded. The highest land is here one hundred and fifty feet above high-water mark; but it does not attain that height short of a quarter of a mile back from the water's edge, as the slope is gentle though regular.

As before remarked, the eastern shores of Muscongus Sound are formed by Muscongus and Hog islands. The former is separated from the latter by a passage three-eighths of a mile wide, through which five feet may be taken at mean low water over a shoal connecting the two islands. This shoal is known as **Muscongus Bar.** Muscongus Island lies NNE. and SSW., and is a little over two and a half miles long. The highest part of the island is near its northeastern end, where there is a wooded hill seventy feet high. The shores are gently sloping, the surface diversified, partly under cultivation and partly wooded,—the eastern shore with pine and spruce, the western with pine interspersed with oak, birch, &c. A small settlement occupies the island. **Muscongus Island.**

Two hundred yards south of the southern end of Muscongus Island is a small rocky islet with a sparse growth of spruce upon it, called **Bar Island.** It is connected with Muscongus at low water.

Hog Island, lying just to the northward of Muscongus, has been already described in the approaches to Medomak River, (see page 335,) but a repetition will not probably be out of place. The island is nearly a mile and a half long, and lies in a NE. by N. and SW. by S. direction,—its northern end being separated from **Hockomock Point** (the southern extremity of Hockomock Peninsula) by a passage two hundred and fifty yards wide, called **The Lower Narrows,** through which thirteen feet at low water may be taken into the Western Passage of Medomak River. Hog Island is of moderate height,—being in no place more than sixty feet high,—partly wooded, but in many places bare of trees. The western face is somewhat bluff and precipitous, while the southern point of the island is low and wooded with spruce. **Hog Island.**

Muscongus Harbor, on the western shore of the Sound, is a narrow cove, about three hundred and seventy-five yards long, running about W. by S. into the eastern shore of Pemaquid Neck, a mile and a half NE. by N. from Round Pond. It is protected from easterly winds by Hog Island, and is entirely unobstructed; but is, however, only fit for light-draught vessels, as it is very shallow. Six feet at low water may be carried into the cove for about half its length. Beyond that distance, to the head of the harbor, there is only one or two feet at mean low water; and at low springs this portion is all dry. Its shores are cleared and somewhat thickly settled.

Muscongus Harbor.

Northward of Muscongus Harbor wooded land again appears, and the shore runs in the same general direction, about NE. by N. The land rises to the westward to a bare summit two hundred and forty feet high, which is about three-eighths of a mile back from the shore-line. This is called **Muscongus Hill**.

Muscongus Sound terminates in a long cove, called Greenland Cove, contained between Hockomock on the east and Pemaquid Neck on the west. Exactly in the middle of the entrance, and forming the proper northern boundary of the Sound, is a low island with a few scattered trees upon it, called Ram Island. It is a quarter of a mile long, and extends in a NE. by N. direction. A long line of ledges makes off about S. by W. from its southern end for three-eighths of a mile. These ledges are called **Half-Tide Ledges**, and are dry at low water.

Ram Island.

Greenland Cove. Greenland Cove is a little over a mile long, and half a mile wide at its mouth, measuring from Hockomock Point to Pemaquid Neck; but this entrance is obstructed by Ram Island, which divides the passage into two channels. The eastern and deepest channel is two hundred and seventy-five yards wide from shore to shore; the western channel is three hundred yards wide. By the eastern channel—that is, between Hockomock and Ram Island—two fathoms at mean low water may be carried into the cove to about half a mile beyond the island; by the western channel, eleven feet may be taken to the same point. Beyond this point there is from one to three feet at low water to the head of the cove.

The shores on both sides of Greenland Cove present the same general features as those of Muscongus Sound. They are partly cleared and partly wooded, with a few houses here and there on the summits and slopes. The highest land is on the western side, near the head of the cove, where it rises to the height of one hundred and sixty feet. The land at its head is low and marshy.

DANGERS

IN APPROACHING AND ENTERING MUSCONGUS SOUND THROUGH MUSCONGUS BAY.

After rounding Pemaquid Point the first obstruction met with is a three fathom ledge, called Pumpkin Cove Ledge. It lies off the mouth of Pumpkin Cove, nearly half a mile from shore, and bears NE. by E. ¾ E. from Pemaquid Light-house, distant one mile. It is only dangerous in heavy southerly or easterly gales.

Pumpkin Cove Ledge.

Passing to the eastward of Pumpkin Cove Ledge you come to New Harbor Dry Ledges, two bare rocky islets between five and six hundred yards from the eastern shore of Pemaquid Neck and nearly a mile to the northward of Pumpkin Cove Ledge, lying NE. by N. and SW. by S. from each other, two hundred yards apart. Both are quite bold on their eastern sides, but vessels passing to the southward must give them a berth of four hundred yards, not only to clear the shoal water which extends to the southward from the southern rock, but also to avoid, in standing inshore, *the dry ledge to the westward of them*, which is only two hundred and seventy-five yards from the shore, about a quarter of a mile above Yellow Head. There are several rocks inside of New Harbor Dry Ledges and to the southward of Little Island; therefore strangers should always go to the eastward of these ledges, where they will be out of all danger. The northernmost of the two bare islets forming New Harbor Dry Ledges bears S. from Little Island, distant a quarter of a mile.

New Harbor Dry Ledges.

Little Island should receive a berth to the southward of two hundred and fifty yards, and to the northward of two hundred yards, from vessels beating in or out.

Salt Pond Ledge, also on the western side of the entrance, lies off the mouth of Long Cove, to which it is the only obstruction. It is a small rock with thirteen feet at low water, lies three hundred and fifty yards from shore, bears NE. ¼ N., three-eighths of a mile from Little Island, and E NE., six hundred yards from the southern point of the entrance to New Harbor. The entrance to that harbor passes between this ledge and Little Island.

Salt Pond Ledge.

Passing the entrance to Long Cove, and when well to the westward of Haddock Island Kelp Ledge, Webber's Sunken Ledge is next reached. It is on the eastern side of the channel, although in the middle of the entrance, has seven feet at low water, and lies NW. ½ N. from the southern point of Haddock Island, distant three-eighths of a mile, or nearly eight hundred yards. Off its southern side, in five fathoms, is placed a red spar-buoy, marked No. 2. To the northward of it, (N. by E. ¼ E.,) two hundred and fifty yards distant, is another ledge, dry at low water, and called *Webber's Dry Ledge*. Six fathoms may be carried between these two shoals, and they may be passed on either hand; but the main channel is to the westward of them, along the eastern shore of Pemaquid Neck. Two hundred and fifty yards N. by E. ¼ E. from Webber's Dry Ledge is a fourteen feet rock, known as *Webber's North Ledge;* and four fathoms may be taken between it and the Dry Ledge.

Webber's Sunken Ledge.

Brown's Head Ledge is a small rock with thirteen feet water on it at low tide, lying three-eighths of a mile S. by E. ½ E. from Brown's Head and a quarter of a mile NW. from Webber's Dry Ledge. There is a good channel to the eastward, between it and Webber's Ledges; but the main channel passes to the westward, between it and Pemaquid Neck. ***Brown's Head Ledge.***

When past Brown's Head Ledge, Muscongus Sound is entered. The eastern point of the entrance is Bar Island, the small island off the southern end of Muscongus. This island is surrounded by shoal water; and on its southern and western sides it must not be approached nearer than between five and six hundred yards, to avoid Bar Island Rock, a detached rock with eleven feet at mean low water, situated a quarter of a mile SW. by W. from the southern point of the island. The main channel, however, does not approach this shoal closely, and it is therefore dangerous only to those vessels endeavoring to pass into the Sound by the passage between Pond and Muscongus islands and to vessels beating in or out. ***Bar Island Rock.***

After passing Brown's Head, there is to the eastward, well over towards Muscongus Island, another shoal, called Bar Island Ledge, which has a rock, dry at three-quarters ebb, near its centre, and lies a quarter of a mile W. from the southern end of Muscongus Island and three-quarters of a mile NE. from Brown's Head Ledge. Four fathoms may be carried between it and Muscongus Island, but the main channel passes well to the westward of it. It is marked by a red spar-buoy (No. 4) placed in four fathoms off its southern end. ***Bar Island Ledge.***

After passing Bar Island Ledge there are no obstructions or dangers for nearly a mile. The channel inclines towards the eastern side of the Sound, and the first danger met with you may leave to the westward. It is called Poland's South Ledges, and consists of two rocks lying E. and W. from each other one hundred and twenty-five yards apart, and six hundred yards from the western shore, (or Pemaquid Neck.) The easternmost has twelve, the westernmost nine feet at mean low water; and in five fathoms, just to the eastward of the former, is placed a black spar-buoy, marked No. 1. These ledges lie one mile NE. ¾ N. from Brown's Cove and seven-eighths of a mile N. ¾ E. from Bar Island Ledge; and the channel passes to the eastward of them. ***Poland's South Ledges.***

Poland's North Ledge, bare at low water, lies three hundred and twenty-five yards off the shore of Pemaquid Neck and six hundred yards N. from the easternmost of the South Ledges. A black spar-buoy, marked No. 3, is placed in thirty feet just to the southward of its southern edge. Five fathoms may be carried between this ledge and the shore.

From Poland's North Ledge to the entrance to Round Pond the channel is clear; but it may be remarked that the western face of Muscongus Island, opposite to Round Pond Harbor, is flat,—the shoal being caused by a curve in the shore-line to the eastward, forming a cove, which *is flat and full of ledges dry at low water.* Vessels should give this part of the eastern shore of the Sound a berth of not less than six hundred yards, as the water shoals abruptly from three to one and a half fathoms, and even five feet.

Strangers and vessels of any draught greater than four feet must not attempt at low water to cross between Hog Island and Muscongus; for this space is entirely occupied by a shoal, called Muscongus Bar, bare in places at mean low water, and with only five feet in its deepest part. At high water those acquainted with the channel use this passage, if bound to the eastward, to avoid the longer passage around Muscongus Island, and to enable them to keep to windward longer in northerly winds. There is a depth of fifteen feet there at high water, but the channel is very narrow; and strangers should, therefore, never attempt it without a pilot. ***Muscongus Bar.***

When past Muscongus Bar there is a clear channel to Muscongus Harbor. Approaching this harbor from the southward, care must be taken to give the southern point of the entrance a berth of two hundred and fifty yards, to avoid *a ledge making out about three hundred yards below this point,* and which extends two hundred yards from shore. After passing this ledge the entrance to the harbor is plain and unobstructed.

Half-Tide Ledge, bare at three-quarters ebb, lies exactly in the middle of the channel. It bears NE. by E. ½ E., half a mile from the southern point of the entrance to Muscongus Harbor, and SW. by S. ¼ S. from the middle of Ram Island, distant three-eighths of a mile. ***Half-Tide Ledge.***

From the southwestern end of Ram Island dry ledges extend over a hundred yards; and thence, to within seventy-five yards of Half-Tide Ledge, a long ledge, dry at low springs, extends. This and the dry ledges joining Ram Island are known as Ram Island Ledges, and Half-Tide Ledge belongs properly to this line of shoals. In the channel to the westward of these ledges seventeen feet may be carried up as far as Ram Island by keeping close to the western edge of the shoals. In the main channel, to the eastward, three fathoms may be taken up beyond the northern point of Ram Island into Greenland Cove. ***Ram Island Ledges.***

Vessels intending to pass through the Lower Narrows must beware of *a rock with five feet at mean low water,* which lies in the western entrance four hundred and thirty yards S. by W. ¼ W. from the low bare point making out from the western side of Hockomock Point. This low bare point may be

known by its appearing like an island when seen from the southward. *A long ledge, dry at half-tide,* makes out to the southward from it to a distance of three hundred yards; so that vessels entering from the westward must hug the Hog Island shore to avoid it.

The northern end of Hog Island has a shoal making off to a distance of about three hundred yards, thus nearly closing the Narrows; and the channel is here only twenty-five yards wide, with thirteen feet at mean low water.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MUSCONGUS SOUND THROUGH MUSCONGUS BAY.

I. ***Coming from the Eastward.***—Bring Pemaquid Light-house to bear **W.** by **N.** ¼ **N.**, and steer for it until Franklin Island Light-house bears **NE.** ½ **E.**, with thirteen fathoms. Then steer **N.** by **W.** ¾ **W.** if bound up the Sound, or **NW.** by **N.** ¼ **N.** *if bound to New Harbor.* When off the entrance to New Harbor the course in is about **W.** ¼ **N.**; but it is not safe for strangers to enter without a pilot. *If bound up the Sound,* when, on the **N.** by **W.** ¾ **W.** course, Pemaquid Light-house bears **W.** by **S.** **Nearly,** with ten fathoms water, and you are nearly abreast of the black buoy on New Harbor Sunken Ledges, steer **N.** ¾ **E.**, which will lead, with not less than five fathoms, up to the entrance to the Sound. When past Webber's Dry Ledge, and you are in seven and three-quarter fathoms, with the southern end of Bar Island bearing **E.** ¾ **N.**, steer **NE.** by **N.** ¾ **N.** until nearly up with Round Pond Harbor; after which keep the middle of the passage.

On the above courses, to enter Long Cove.—When, on the course **N.** by **W.** ¾ **W.**, (as above,) Pemaquid Light-house bears **W.** by **S.** **Nearly,** and you are nearly abreast of the black buoy on New Harbor Sunken Ledges, steer **NW.** by **N.** ¾ **N.**, which will lead, with not less than ten fathoms, up to the mouth of the cove. The course in is **N.** by **E.** ¼ **E.**, and you may anchor in from three to six fathoms. This is a comfortable anchorage in easterly winds, and around by **N.** to **SW.** winds. If the wind be ahead, and not too fresh for good working, the wide channel by which it is approached from the southward, between New Harbor Sunken Ledges and New Harbor Dry Ledges, affords ample beating-room, and the cove itself has a clear channel. The only danger is Salt Pond Ledge, which lies between this entrance and that to New Harbor.

On the above courses, to enter Round Pond Harbor.—This entrance is narrowed by a ledge with from three to ten feet at low water, called *Harbor Ledge,* extending from the southern point of the entrance towards the channel for about two hundred yards. Off its northeastern edge, in three fathoms, is placed a black spar-buoy (No. 5). Should the buoy by any means become adrift, give the southern point a berth of about two hundred and seventy-five yards, and steer boldly in on a **W.** course, with not less than three fathoms, until well inside the entrance, passing safely within sixty yards of the northern point with eighteen feet; and after passing it anchor at discretion. This is a most excellent harbor for vessels of twelve feet draught or less; and there is excellent anchorage in fourteen feet on the southern side.

Muscongus Harbor is perfectly open, and no directions are needed.

II. ***To come through Davis' Straits and enter New Harbor.***—The course through Davis' Straits is **SW.** ¾ **W.**, passing to the southward of Griffin's Ledge buoy close-to, (see page 324.) When fairly through the passage, and about three hundred and twenty-five yards from Davis' Island, steer **W.** ¾ **S.**, carrying not less than five fathoms, and passing three hundred and fifty yards to the northward of Benner's Island and two hundred and thirty yards to the northward of the red buoy off Seal Ledges; and thence steer **W.** by **S.** ½ **S.** for the passage between Eastern Egg Rock and Egg Rock North Ledge. On this course there is not less than four fathoms. When abreast of the black buoy off the southern end of that ledge, with eight fathoms water, steer **W NW.**, which course will lead you safely to the mouth of New Harbor. This passage, however, is only safe for those who are acquainted with the localities of the various ledges.

III. ***Coming from the Westward, to enter Muscongus Sound.***—Pass Pemaquid Light-house at a distance of a mile and a half, and when it bears **N NE.**, with twenty fathoms, steer **NE.** ⅝ **N.**, which will lead you into the Sound with not less than twelve fathoms. When past Bar Island Ledge, with the southern end of Muscongus Island bearing **SE.** by **E.**, steer **NE.** by **N.** ¾ **N.**, and follow the directions given above for the Sound.

To enter New Harbor.—Keep the eastern side of the Dry Ledges and Little Island aboard until exactly off the entrance, with the middle of the passage bearing W. ¾ N. Then, if drawing less than twelve feet, or if it be high water, steer W. ½ S. into the mouth of the harbor. This course leads to the southward of a bad sunken rock, with three feet at mean low water, called *Flat Rock*, lying exactly in the middle of the entrance; but which is marked by a red spar-buoy (No. 4) placed in three fathoms off its southwestern side. When within about seventy-five yards of the western point of entrance to **Back Cove** the shoals which so contract the entrance are cleared, and a **NW.** course will lead to a convenient anchorage in from twelve to fifteen feet at low water. *Sailing Directions—Muscongus Sound.*

To enter Long Cove.—On the **NE. ⅝ N.** course, when Franklin Island Light-house bears **E. ½ N.** and you are abreast of Little Island, steer **N.** by **E.** This course passes to the eastward of Salt Pond Ledge and leads safely up to the anchorage near the head of the cove, carrying not less than five fathoms.

The passage of the Lower Narrows is unsafe for strangers. It may be made by keeping the northwestern shore of Hog Island aboard until you are past the five feet rock which obstructs the entrance, and then gradually inclining toward the Hockomock shore until within about sixty yards of it. Then keep from sixty to seventy yards distant until fairly through the passage, when an **E.** by **S. ½ S.** course will lead into Medomak River between Oar Island and the wooded island south of it, and will avoid the rock in mid-channel by giving it a berth of nearly a hundred yards to the southward. (See Middle Ledges, page 342.) Thirteen feet at mean low water may thus be taken through the Lower Narrows.

LIGHT-HOUSES IN MUSCONGUS BAY.

Name.	Latitude.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		m. s.	Feet.	
Monhegan Light-house	43 45 52	69 18 57	4 37 15.8	Revolving.	1 0	175	19
Franklin Island Light-house	43 53 31	69 22 30	4 37 30.0	F. V. F.	1 30	54	12
Pemaquid Light-house	43 50 12	69 30 22	4 38 1.5	Fixed.	.....	75	14

TIDES IN MUSCONGUS BAY.

	Medomak River.	New Harbor.
Corrected Establishment	10h 56m	11h 7m
Mean Rise and Fall of tides	10.0 ft.	8.9 ft.
Mean Rise and Fall of Spring tides	10.6 ft.	9.3 ft.
Mean Rise and Fall of Neap tides	9.2 ft.	8.1 ft.
Mean duration of Rise	5h 58m	6h 20m
Mean duration of Fall	6h 27m	6h 5m

CURRENTS.

Sailing vessels entering Meduncook River must wait for flood-tide to pass through the narrow channel between Crotch Island and the main, unless they have a strong fair wind. The channel, though straight, is narrow and does not afford anchorage, and the current runs very swiftly. Young flood is the best time to enter this river, because on the strength of the flood a vessel might, in passing along the northern shore of Crotch Island, be set on the rocks off the mouth of Hornbarn Cove; and if ebb be not spent before reaching this part of the channel there will be danger of grounding on the dry ledges which make off from the northern end of Crotch Island.

In the passage between Bremen Long Island and Cow Island, in Medomak River, the northern shore should always be kept aboard, whether the tide be ebb or flood. A range for passing through this channel may always be caught with some object on Hog Island. The southern side of this passage is shoal,—the best water being on the northern shore, close under Bremen Long Island. In passing up the Medomak River by the Flying Passage sailing vessels should manage so as to enter the passage at slack water, or on the first of the flood. Thus they will be enabled safely to shoot the very narrow passage between the northern end of Bremen Long Island and Hungry Island; the current will keep them from being set on the ledges which make off from the northeastern point of the former; and in passing to the westward, between Jones' Point on the north and Bremen Island on the south, they will have a wider channel, and will be able to hug the southern shore until they are past the ledges south of Jones' Point and can bring Miller's Island to bear. Then they may safely shoot the passage, between the ledges off Jones' Point on the east and Northwest Point Ledges on the west, into the main channel.

Currents--Muscongus Bay. But in passing through The Narrows the greatest caution must be exercised, and no stranger should attempt the passage even on young flood and with a fair wind, for the channel is not fifty yards wide, and the flood sets on to Havenner's Ledge and the ebb on to the ledges north of Locust Island. The current runs with great rapidity, especially the ebb; for the greater portion of the large volume of water above The Narrows has to pass through this very contracted channel, making The Narrows the most dangerous part of the whole river channel. Once through The Narrows, however, the flood will be favorable as far as Hollis' Point; and above this point it is not safe to go without a pilot.

The passage of the Lower Narrows should never be attempted by strangers on account of the rapid current and the shoals which make off from the northern end of Hog Island. The flood sets nearly directly through this passage, but the ebb sets more across and towards Hog Island.

Vessels bound into Round Pond must keep the northern side of the entrance close aboard, whether the tide be ebb or flood. Flood and ebb currents will be equally apt to set a vessel coming from the southward on to the rocks off the southern side of the entrance, unless she keeps well over towards the other shore.

VARIATION OF THE COMPASS.

The magnetic variation for 1879, off Muscongus Bay, is 14° 26′ W., with an approximate annual increase of 2′.

ICE IN ST. GEORGE'S AND MEDOMAK RIVERS AND MUSCONGUS BAY.

Ordinarily these rivers are closed to navigation during February and part of March; but in severe winters, like that of 1874–5, they freeze over early in January and remain closed until the latter part of March. The formations are entirely local.

JOHN'S BAY

is the first bay to the westward of Muscongus Bay,—Pemaquid Neck separating the latter from it. Its entrance lies in

Latitude ..... 43° 49′ N.
Longitude ..... 69° 31′ W.,

and is contained between Pemaquid Point on the east and Thrumbcap and Rutherford's islands on the west,—these islands separating John's Bay from the mouth of the Damariscotta River to the westward. The entrance to the bay is one mile and a half wide. Thence it extends in a northerly direction and with nearly the same width for two miles and three-quarters to its head, where it sends off two arms, one to the northward called **John's River**, and the other to the northeastward called **Pemaquid River**. The bay is entirely unobstructed from its mouth to John's Island, two miles and a quarter to the northward, and the shores are quite bold-to. Above John's Island there are several dangers obstructing the entrance to Pemaquid and John's rivers, which will be treated of in the proper place.

The eastern shore of John's Bay is formed by **Pemaquid Neck**. At the southern end of the neck, called Pemaquid Point, the land is low and bare, but along its western side, from the point to the entrance to Pemaquid Harbor, it

Pemaquid Point. is generally thickly wooded. Along this shore it slopes very gradually back from the shore-line, attaining a height of about one hundred and sixty feet three-quarters of a mile from the edge of the shore.

Above Pemaquid Point the land runs about N. for two miles and a half, with rocky shores, wooded to the water's edge. Then it turns abruptly to the westward for about a quarter of a mile, with a sandy beach, ending in a low

Fish Point. point, bare of trees, but occupied by several houses. This point is called Fish Point, and forms the eastern side of the entrance to Pemaquid Harbor, which lies between Fish Point on the east and the partially wooded point known as **Thurston's Point** on the west. Fish Point is the site of a large porgy-oil factory, to which the buildings belong. Between this and Thurston's Point is an excellent anchorage, with six and seven fathoms water, in the mouth of Pemaquid River. It is called **Pemaquid Harbor.**

The western shores of John's Bay are formed by a line of islets, with a large island behind them, extending from the entrance to the bay to the mouth of John's River, where the mainland, forming the peninsula of Bristol, begins. These islands, beginning with the most southerly, are called Thrumbcap Island, Thread of Life Ledges, Turnip Island, Crow Islands, Hay Island and Birch Island; and the large island to the westward of these islets is Rutherford's Island. Close to the northern point of Rutherford's Island is a small islet called Davis' Island.

Thrumbcap Island. Thrumbcap Island will appear as two low islets, joined at low water by the ledges between them. The southern islet is irregular in shape, with a diameter of about two hundred and fifty yards; while the northern islet is long in proportion to its width,—being a quarter of a mile in length by one hundred and fifty yards in width. It is forty feet high and partly wooded with spruce trees. There is a single house on the southern islet.

Thread of Life Ledges are a group of dry rocks, half a mile in extent and surrounded by shoal water. They lie just to the northward of Thrumbcap, and between it and another group of bare islets called Crow Islands. These are three in number,

Crow Islands. lying **N NE.** and **S SW.** from each other, and united at low water by dry ledges. They are quite small,—the largest being little over one hundred yards square. Three fathoms may be taken between the southernmost of these islets and the Thread of Life Ledges through a very narrow channel, not safe for strangers. Between the Crow Islands and the eastern shore of Rutherford's Island is a narrow but good passage, leading behind the Thread of Life Ledges and Thrumbcap Island into Damariscotta River or to sea, and called the **Thread of Life.** To the northward of the Crow Islands it leads behind Hay and Birch islands into a small shallow cove called Little Harbor.

Hay Island is eight hundred yards to the northward of the Crow Islands; and the passage between them has from five to seven fathoms and is unobstructed. Hay Island is nearly three hundred yards long and about one hundred broad, has a few trees near its southern end, and is separated from Rutherford's Island by the Thread of Life passage, which is here one hundred and fifty yards wide. From its southern end a line of bare ledges extends about two hundred and seventy-five yards to the southward. **Hay Island.**

Birch Island, which is only one hundred yards to the northward of Hay Island, is nearly five hundred yards long and one hundred wide, and is thickly wooded. It is separated from Rutherford's Island by Little Harbor, which is here only seventy-five yards wide and quite shoal. About seventy-five yards to the northward of Birch Island is a bare rocky islet about one hundred yards long, which at low water is connected with the shore of Rutherford's Island. In fact, all of these islets and rocks extending along the eastern shore of Rutherford's Island are parts of one long ledge, which, cropping out here and there, forms, according to the heights and sizes of the peaks, ledges, dry rocks and islets. Little Harbor is only of use for light-draught vessels, as at low spring tides it is almost entirely bare. **Birch Island.**

Rutherford's Island lies **NE.** and **SW.**, between John's Bay and the Damariscotta River, and is about two miles long and of irregular shape. The southern point of the island is low and covered with trees, but much of the eastern shore is cleared and sparsely settled, except near the northern end, where there is a wooded bluff about sixty feet in height. The highest land on Rutherford's Island is a wooded hill, one hundred and thirty feet above the sea, nearly in the middle of the island. **Rutherford's Island.**

Little Harbor is formed by a narrow cove making in on the eastern shore of Rutherford's Island in a northerly direction. It is very shoal, and therefore of little importance except to light-draught vessels. On the southwestern side of the island there is a long and deep cove, forming an excellent harbor, called **Christmas Cove.**

Turnip Island lies off the southern end of Rutherford's Island, two hundred yards distant. It is small, very low, and has a few spruce trees upon it. The Thread of Life passes to the eastward of it, into Damariscotta River. **Turnip Island.**

Rutherford's Island is separated from the mainland, to the northward, by a narrow passage called **The Gut.** This passage is, however, closed by a bridge, across which runs the county road.

Davis' Island lies about two hundred yards to the northward of Rutherford's Island, is nearly a quarter of a mile long, and extends in a **NE.** and **SW.** direction. The summit is forty feet above the sea, and the whole island is thickly wooded with pine, spruce, oak and birch trees. **Davis' Island.**

Between Davis' and Rutherford's islands is a small low islet, (with a single house upon it,) known as **Gammay's Island.** There is no passage between it and Rutherford's Island.

Davis' Island lies on the eastern side of McFarling's Cove, which is formed by a long and irregular curve in the western shore of John's Bay, just below the entrance to John's River. It is three-quarters of a mile long in a **N.** and **S.** direction, extending from the western point of entrance to John's River to The Gut. It has excellent anchorage, although the approaches to it are somewhat obstructed; but the cove itself is free from all dangers. Its northern and southern shores are both cleared and have a few houses built upon them, but the western shore is thickly wooded, and the land rises rather steeply to a height of one hundred and fifty feet. **McFarling's Cove.**

At the southern end of McFarling's Cove there is a large porgy-oil factory, which is built on the western side of the entrance to The Gut. The buildings belonging to this factory are seen between the northern point of Rutherford's and the southern end of Davis' Island, by vessels passing up the bay, as soon as the passage between Davis' and Gammay's islands is opened.

The peninsula which separates Damariscotta and John's rivers is occupied by the town of **Bristol,** and is called **Bristol Neck.**

The northern shores of John's Bay are formed by a neck of land or peninsula separating John's River from Pemaquid River. The southern part of this peninsula is thickly wooded, and the land attains a height of one hundred and sixty feet about half a mile back from the shore. Its southeasterly point is low, cleared and cultivated, and has one or two houses upon it. The eastern portion of this peninsula, that is, that part which lies nearest to Pemaquid River, is well settled, and much of the land is under cultivation. Its southwestern point is called Thurston's Point, and forms the eastern point of entrance to John's River. It is low and partly cleared and settled,—the cleared land being backed by thick woods. On its southern side it is dangerous of approach, and should receive a berth of at least a quarter of a mile to avoid the ledges which make off from it. **Thurston's Point.**

Vessels coming into John's Bay from seaward will see ahead, in range with Thurston's Point, a wooded island whose shores rise gradually from the water to its summit, which is sixty feet above sea-level. This is John's Island, situated midway between the northern end of Rutherford's Island and **Fish Point.** It lies **N.** and **S.**, is six hundred and seventy-five yards long and over two hundred yards wide, with bold shores except on the northern side, where shoal water extends to the northward two hundred yards. The northern end of John's Island is bare of trees except a solitary one standing on the extreme northern point. The land is also quite low and bare, forming a contrast to the southern part, which is sixty feet high and thickly wooded. **John's Island**

The entrance to Pemaquid Harbor is between this island and Thurston's Point, but it is obstructed by Beaver Island, a rocky islet with a few spruce trees on it, lying about three hundred yards to the northward of John's Island. It extends in a **N.** and **S.** direction for one hundred yards, and is fifty yards wide. The main channel **Beaver Island.**

into Pemaquid River passes between this islet and Thurston's Point, and is more than two hundred yards wide; but there is also an excellent channel to the southward, between it and John's Island, which is about one hundred yards wide, with five fathoms. Vessels may safely pass through this passage by giving John's Island a berth of two hundred and fifty yards, and keeping about seventy-five yards to the southward of Beaver Island.

PEMAQUID RIVER AND HARBOR.

Pemaquid River empties into the northeastern corner of John's Bay, which is called Pemaquid Harbor. This harbor is an excellent anchorage, with from five to seven fathoms and well sheltered, and is contained between Fish Point on the **SE.** and Thurston's Point on the **NW.** The eastern shores are low, cleared and settled; the western partly cleared and partly wooded.

Partridge's Point. Three-eighths of a mile **NNE.** from Fish Point is Partridge's Point, the eastern point of the entrance to Pemaquid River. It is low and cleared; its summit, thirty feet above sea-level, is occupied by a dwelling-house and barn; and a little to the westward are seen the remains of an old earthwork. The mouth of the river between this point and the western point of entrance is not quite one hundred and fifty yards wide; but the channel is clear, and after passing between the two points expands into a bay between five and six hundred yards wide, called **Inner Harbor.** This is a most secure anchorage in all winds, and has three fathoms at low water.

From Inner Harbor the general course of the river is **E. ½ N.** for a little over half a mile, when it turns abruptly and runs about **N.** a mile farther to the head of navigation. The eastern shores are partly wooded, but mostly cleared and under cultivation; the land low, and sloping gently up to the base of the wooded hills behind it, which are over two hundred feet in height. The western shores are also mainly cleared and settled, but the rise of the land is more abrupt, attaining a height of one hundred and forty feet at seven hundred yards from the river bank.

Graveyard Cove. A shallow cove, about a quarter of a mile long, called Graveyard Cove, runs to the southward behind Partridge's Point. Its name is derived from the small burial-ground on the northern end of the point; and it is almost entirely bare at low water.

At the end of the first reach of the river, and directly opposite to **Old Fort Point,** is another long and narrow cove, called **Coombs' Cove.** It is three-eighths of a mile long in a **NE.** by **E.** direction, and is bare at low water.

At the head of Pemaquid River is situated the village of **Pemaquid Falls,** which also occupies the eastern bank. The river is, however, dry at low water three-eighths of a mile below the village.

Pemaquid River is shoal and the channel narrow and crooked. The course of the latter is, however, pretty well marked by the eel-grass which fringes it on both sides, and by keeping clear of the grass vessels will pass in good water until they enter the second reach of the river. Beyond this the water is very shoal and the channel obstructed by rocks. The shoals in this river are mostly mud-flats.

JOHN'S RIVER.

John's River empties into the northwestern part of John's Bay, and its entrance is between Thurston's Point on the east and McFarling's Point on the west. Both of these points have been already described, and between them the mouth of the river is five-eighths of a mile wide.

From Thurston's Point the eastern shore of John's River has a general course about **NNE.,** for a mile and a half, to the mouth of a long and narrow cove, called Eastern Branch. There are a few patches of clearing along the shore in this distance, but it is mostly wooded to the water's edge. The shores rise regularly, but not steeply, to the summits of the ridges, which vary in height from one hundred to one hundred and sixty feet. On the southern side of the entrance to Eastern Branch, however, the land is partly cleared and a few houses are seen.

Eastern Branch, sometimes called **Foster's Cove,** is the eastern arm, as its name implies, of John's River; and is seven-eighths of a mile long, with an average width of three hundred and fifty yards, and a course about **N.** by **E.** A small island lies on the northern side of the entrance to this stream, called **Foster's Island.** It bears **S.** from the southeastern point of the peninsula separating Eastern from Western Branch, and is joined to the point at low water. Seen from the river

Eastern Branch. it appears as a low islet, bare of trees, (except at its northwestern end,) with one dwelling-house and a barn near its summit. It lies **NNE.** and **SSW.,** and is nearly four hundred yards long,—thus contracting the mouth of Eastern Branch to a width of a little over two hundred yards. Both shores of Eastern Branch are low and in most places cleared; but the eastern bank is the highest, and is tolerably well settled. The western shore is quite low, and but few dwellings are visible upon it. Six feet at low water may be carried up this cove for half its length, but beyond that it is dry at low water.

The western shore of John's River, from McFarling's Point to the northward, presents a different appearance from the eastern side. The summit of the point is eighty feet high and wooded, but it descends on its northern side to very low land, cleared and cultivated, and then rises again to a thickly-wooded summit fifty feet above high-water mark. This gives the land between McFarling's Point and High Island a saddle-like appearance when viewed from the eastward.

Three-quarters of a mile **NNE.** from McFarling's Point is a wooded island, lying **N.** and **S.,** and nearly half a mile long, called High Island. It is separated from the mainland at high water by a passage seventy-five yards broad,

High Island. and crossed by a bridge or causeway; but at low water the ledges are dry and the island forms part of the mainland. High Island at its southern end and on its eastern face is one hundred feet high,—the land rising steeply from the water's edge to the summit, and wooded with pine and spruce. The northern portion of the island is quite low, and has a few trees scattered along the edge of the shore-line.



Approaches to John Bay, Pemaquid Light bearing N.E ¼ N. distant ⅝ Mile.

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On passing High Island there will be seen ahead a low point thinly fringed with oak and birch; and between it and the northern point of High Island a passage several hundred yards wide is opened, leading into a large cove, (which runs to the southward behind High Island and to the northward behind the low point above mentioned, which is called Clarke's Point,) known as Robinson's Cove. Between its northern and southern points it is a mile and a quarter long; and as its entrance is at right angles to the course of the cove it affords a well-sheltered anchorage for light-draught vessels. The passage between Clarke's Point and High Island is three hundred and fifty yards wide at high water, but at low water this is diminished to one hundred and seventy-five yards. Between the lines of two fathoms at low water the channel is one hundred yards wide in its narrowest part.

Robinson's Cove.

From the western shore of this cove, midway between its northern and southern ends, opens Bradstreet's Cove, about six hundred yards long, with an average width of one hundred and fifty yards, and nearly all dry at low water. This cove is immediately opposite to the entrance to Robinson's Cove, and in coming in you may look along its whole length. To the northward of it the land is in no place over sixty feet high, and is cleared and settled. To the southward of it steep wooded hills, with an outcrop of bare ledges over their surfaces, begin and continue nearly to the southern end of the peninsula. Along the shore-line of Robinson's Cove, however, the land is low and fringed with scattered trees. Twelve feet at mean low water may be taken into this cove to a comfortable anchorage near its southern end; but the northern portion is quite shoal.

Bradstreet's Cove.

From Clarke's Point, proceeding up the river, the shores are found high, steep, and in many places cleared and settled. The crests of the ridges are in height from one hundred to one hundred and sixty feet, and it is upon these summits that the settlements usually appear. The general course of the shore is about **N NE.** for a mile and three-eighths to the head of the Western Branch of the river. This branch has a length of about a mile and a half, a course about **N NE.**, and enters between a small, low, wooded island, called Peabow Island, on the north and Clarke's Point on the south,—giving an entrance four hundred yards wide.

Western Branch.

Peabow Island lies two hundred and seventy-five yards **S.** by **W.** from the southwestern point of the peninsula separating Eastern from Western Branch, and is sparsely wooded with spruce; but the mainland itself is low and destitute of trees. The whole of the eastern shore of this branch is low and nearly cleared of trees,—scattered groups only appearing. At the head of the cove, however, is a low and thickly wooded shore, covered with pine, oak and birch to the water's edge.

Peabow Island.

Eight feet at mean low water may be taken into Western Branch and carried up it for some little distance. The entrance is, however, obstructed by sunken rocks and is not safe for strangers.

DANGERS

IN APPROACHING AND ENTERING JOHN'S BAY AND TRIBUTARIES.

The first danger met with in approaching the entrance to John's Bay is *Pemaquid Ledge*, which has sixteen feet at mean low water and about fourteen at low spring tides, and lies nearly a mile and an eighth **SW. ½ S.** from Pemaquid Light-house and about a mile off the southern point of Pemaquid Neck. The shoalest water is only in one small spot,—the rest of the ledge having nothing less than four fathoms at low water. A spar-buoy, painted red and black in horizontal stripes, is placed in six fathoms just to the southeastward of the ledge.

One-quarter of a mile **E.** by **S.** from the northern end of Thrumbcap Island is a ledge with three and a half fathoms at low water, called Thrumbcap Ledge, upon which, in heavy southerly winds, the sea sometimes breaks. There is very deep water between it and Thrumbcap Island.

Thrumbcap Ledge.

After passing Thrumbcap Ledge the bay is entirely unobstructed until up with John's Island. The eastern shores are bold, and may be safely approached within two hundred yards; while the Thread of Life Ledges, Crow, Hay and Birch islands, as well as Rutherford's Island on the western side of the bay, may be approached almost anywhere within fifty yards with not less than three fathoms.

On the eastern side of the bay, when up with the southern end of John's Island, there will be seen to the northeastward a group of ledges lying close inshore to the eastward of Fish Point; and a group of bare rocks directly ahead, about midway between John's Island and Fish Point. The inshore group, known as the Beach Ledges, lie a quarter of a mile from the shore, in the mouth of the cove with the sandy beach, (before described, page 350,) —the northern side of which is formed by Fish Point. These ledges are bare at low water and cover a space over three hundred yards square.

Beach Ledges.

Knowles' Rocks is the group of bare rocks seen directly ahead, dividing the eastern passage into two nearly equally wide channels. The best water is, however, between the rocks and John's Island. This group is formed by four bare rocks,—the easternmost one being the largest. Vessels may pass on either side by giving them a berth of one hundred yards, and will have not less than four fathoms water.

Knowles' Rocks.

Fish Point should receive a berth of at least two hundred yards, to avoid *a rock with one foot and a half at mean low tides, (and bare at low springs,)* lying one hundred and fifty yards to the westward of the southern end of the point.

Pollock Rock. On the western side of the bay the first obstruction met with, after passing Thrumbcap and Thread of Life ledges, is a small bare rock about one hundred yards to the eastward of the northern point of Rutherford's Island. It is called Pollock Rock, and is quite bold on all sides. Vessels may pass within twenty-five yards of it, on any side, with not less than three fathoms water.

Corvette Ledge. Corvette Ledge, the first ledge met with after passing Pollock Rock, bears **E NE.** from the eastern point of Davis' Island, two hundred yards distant, and has five feet at mean low water, or about three feet at low spring tides. The whole ledge within the lines of three fathoms is only ninety yards square. Five fathoms at low water may be carried to the westward, between it and Davis' Island.

Thurston's Ledges. After passing Corvette Ledge the channel into John's River leads between two bad ledges,—one lying south of Thurston's Point and the other **E SE.** from McFarling's Point. The former is known as Thurston's Ledges, extending off from Thurston's Point three hundred and fifty yards, and composed of two distinct groups. The eastern group is a line of five bare rocks, united at low water. The western group lies one hundred yards to the westward of the others, with a twelve feet channel between them, and is composed of two bare rocks, united only at low spring tides. The shoal water surrounding these ledges makes it dangerous to approach the southern shore of Thurston's Point nearer than four hundred yards. These ledges form an obstruction common to both John's and Pemaquid rivers.

McFarling's Ledges. The ledges off McFarling's Point are called McFarling's Ledges, and are the principal obstructions to the entrance to McFarling's Cove and John's River. They are about five hundred yards **E SE.** from McFarling's Point, and are divided by a narrow channel with three fathoms into two groups. The westernmost rock of each group is bare; the others are all sunken, with from one to five feet at mean low water. The two groups cover a space three hundred and fifty yards **N.** and **S.** by two hundred **E.** and **W.** The entrance to McFarling's Cove is between these ledges and Corvette Ledge. The main entrance to John's River is between them and Thurston's Point; but a good channel also exists between them and McFarling's Point with from four to eight fathoms, and perfectly clear.

In John's River there are no obstructions, after passing McFarling's Ledges, until up to the divide. The eastern shore is very bold until you are abreast of the northern point of High Island, when it should receive a berth of two hundred and fifty yards from vessels of heavy draught. The western shore is also bold up to the southern end of High Island. Give the southeastern point a berth of one hundred and fifty yards, to avoid *a four feet rock* lying one hundred yards to the eastward of it. Beyond this the eastern shore of High Island may be approached within fifty yards until up with the northeastern point; but beyond that, the northern point must receive a berth of three hundred yards, to avoid *the flats and ledges* which fill the space between the northern and northeastern points. At low water these always show themselves and are easily avoided. It is impossible to give an intelligible description of the dangers in the Eastern and Western branches. Both are shoal and of little importance, and strangers will never attempt them without a pilot. The dangers in Eastern Branch are all visible at high water and are thus easily avoided. Seventeen feet may be carried into it past the southern end of Foster's Island.

In the approaches to Western Branch there is *a dangerous rock, with three feet at mean low water and one foot at low spring tides.* It lies two hundred and fifty yards **S.** from Peabow Island and must be left to the eastward. Clarke's Point must also receive a berth of a little over a hundred yards to the westward. After passing between this rock and Clarke's Point, care must be taken to avoid *another three feet rock* which lies nearly in mid-channel,—being three hundred yards **W.** from the southern end of Peabow and three hundred and thirty yards **N.** from Clarke's Point. It may be passed on either hand, but the best channel is to the eastward of it; and to avoid it keep about two hundred yards to the westward of Peabow Island. Beyond this rock there are no obstructions, but there is a depth of only ten feet in the channel.

The same remarks apply to Robinson's Cove that have been made in reference to the Eastern and Western branches of John's River—that is, no intelligible description of the dangers can be given, but at low water the flats are dry, and at high water all that need be done to avoid them is to keep clear of the grass which marks them on both sides, leaving the channel clear and open. This eel-grass is the best pilot into both branches and Robinson's Cove; and it is generally safe to go where it is not.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING JOHN'S BAY AND TRIBUTARIES.

I. ***Coming from the Eastward.***—From outside Monhegan, with the light bearing **NW.** by **N.** ½ **N.**, distant nearly two miles, the course for the entrance to John's Bay is **NW.** by **W.**, and the distance

nine miles and a half. The course for vessels passing between Monhegan and Allen's islands is **W. ¾ N.**, and the distance the same. On the former course there is not less than twenty-two fathoms, and on the latter not less then twenty. On the former of these courses, bring Pemaquid Light-house to bear **NE.**; on the **W. ¾ N.** course, bring the same light to bear **N NE.**; and steer in the former case **N.** by **E. ½ E.** for John's Island, and in the latter **N. ¼ W.**, which course will lead along the western side of the bay in not less than eight fathoms. When within a quarter of a mile of the island, in eight fathoms, *if bound into Pemaquid Harbor or River*, steer **NE.** by **N. ¼ N.** until you are past the southern point of the island, carrying not less than ten fathoms. Then steer **N.** by **E.**, giving the eastern side of John's Island a berth of one hundred yards. Continue this course, carrying not less than six fathoms, until the house and barn on Partridge's Point (page 352) are in range on a bearing of **E. ¼ N.**, with five and a half fathoms, hard bottom. (The houses will be visible just to the northward of the old earthwork on the pitch of the point.) Steer **E. ¼ N.**, keeping the range, and carrying from five and a half to six fathoms, and anchor in Pemaquid Harbor at pleasure, in from four to six fathoms, soft bottom.

Sailing Directions--John's Bay.

These courses lead up the middle of the bay to John's Island, leaving Knowles' Rocks one hundred and fifty yards to the eastward and Beaver Island one hundred and seventy-five yards to the westward.

Now, if bound into Pemaquid River.—On the **E. ¼ N.** course for the house and barn on Partridge's Point, (in range,) when about one hundred yards from the shore there will be seen to the northward the cupola on Captain Childs' house, bearing **N NE.**, and a large dwelling a little to the eastward of it close to shore. Steer **NE.** by **N. Northerly** for that dwelling, and pass between the two points of entrance to the river in not less than seventeen feet at low water. When well into the broad bight which here makes in to the westward, a wharf on the eastern side of the river from behind **Graveyard Point** will be opened; bring this wharf to bear **E.** by **S. ¼ S.** and run for it. On this course not less than nine feet can be carried at mean low water. Continue it past Graveyard Point until you strike three fathoms at low water and the house on Partridge's Point is in range with the eastern slope of the old earthwork, when steer **NE. ¼ E.**, with this range astern, and keep as nearly as possible in the middle of the river until the second reach is opened and its head can fairly be seen; then steer **N. ¾ W.** and keep the eastern shore aboard. No sailing vessel drawing over four feet can pass, at low water, more than three hundred and fifty yards beyond Coombs' Cove, and those drawing over seven feet cannot pass more than an eighth of a mile above that cove.

In general it may be remarked that the grass shows where the shoals are, and by keeping in the clear water there will be no danger.

If bound into John's River.—On the **N.** by **E. ½ E.** course, when within a quarter of a mile of the southern point of John's Island, in eight fathoms water, steer **N. ¾ W.**, which will lead clear of all dangers into the river, carrying not less than eleven fathoms. When abreast of the northernmost bare rock of McFarling's Ledges, in ten fathoms, steer **N.** by **E. ¼ E.**, which will lead clear of everything to the mouth of Western Branch, or to the entrance to Robinson's Cove, carrying not less than four fathoms.

To enter the Western Branch.—Continue the course until within three hundred yards of Peabow Island (which will be directly ahead) and you are in sixteen feet water, when steer **NW.** by **N. ¾ N.** for a dwelling-house, which will appear on that bearing just **N.** of a large barn. (This house and barn are very conspicuous and cannot be mistaken.) This course avoids both of the three feet rocks and has not less than eight feet. The grass is the best guide beyond these rocks, but the course **NW.** by **N. ¾ N.** may be continued until within two hundred yards of the western shore, when a **N NE.** course leads up the river, with about nine feet at low water, for a little over half a mile above Peabow.

To enter Robinson's Cove.—When the extreme northern point of High Island bears **W.** by **S. ½ S.**, and you are in three and a half fathoms, steer **W. ¼ S.**, which will lead you into the cove in not less than four fathoms. Not more than eight feet can be taken up to abreast of the southern end of High Island, and the bottom is soft.

To enter the Eastern Branch.—Keep the eastern shore of John's River aboard until you are past the middle of High Island, when there will be not less than four fathoms. Then, if drawing more than ten feet at low water, give the shore a berth of over two hundred yards, to avoid the shoal water which makes off here to some distance. If of light draught, that is, six feet or less, the shore may be hugged closely until abreast of Clarke's Point. Now bring the pine tree (which has sometimes a flag

Sailing Directions—John's Bay. on it) on the southern point of Foster's Island to bear **NE.** by **N.** and steer for it, avoiding the groups of bare rocks which lie off the southern point of the entrance, and carrying not less than seventeen feet. When about one hundred and fifty yards from the island, in three fathoms, steer **E.** ¼ **N.** for two hundred and fifty yards, when there will be four fathoms; then steer **N.** by **E.** ¾ **E.**, and keep in the clear water between the lines of eel-grass. Six feet water may be carried for about seven hundred yards above the southern end of Foster's Island.

To pass to the westward of John's Island and enter McFarling's Cove.—Continue the course **N.** ¾ **W.** past John's Island until the northernmost point of Davis' Island bears **W.** and you are in eleven fathoms, soft bottom; when steer **W.** by **N.** ¾ **N.**, passing midway between McFarling's and Corvette ledges with not less than nine fathoms. When in the cove, if bound into its southern part, behind Davis' Island, there is nothing in the way from shore to shore; and, carrying not less than three and a half fathoms, you may proceed and anchor at convenience, in from three to four fathoms, soft bottom. It may be remarked, however, that the western side of Davis' Island is more bold-to than the opposite side of the cove.

Vessels may pass out of McFarling's Cove into John's River by keeping McFarling's Point close aboard, and passing between it and McFarling's Ledges, as the shore for some distance north of the point is very bold. This cove may be entered, by vessels coming down John's River, through this same channel,—it being only needful to keep the western shore of the river close aboard to be clear of all danger. McFarling's Cove is an excellent anchorage.

II. ***Coming from the Westward, to enter John's Bay.***—The course from Seguin Island to clear The Bantam is **E.** ½ **S.** Continue this course past Damiscove Island until Pemaquid Light-house bears **NE.** ¾ **N.** and the southern end of Damiscove **NW.** ½ **N.**, when steer **NE.** by **N.** ¾ **N.** for John's Island, which will be in range with the middle of Thurston's Point. Keep this course into the bay, and it will lead close along the eastern side of Thrumbcap and the Thread of Life ledges with not less than ten fathoms water. Then, *if bound up John's River or into McFarling's Cove*, when abreast of the middle of Crow Island, in twelve fathoms water, hard bottom, steer **N.** by **E.** ¼ **E.**, which course leads safely up the river, with not less than nine fathoms, until you are past McFarling's Ledges.

Wishing to enter Pemaquid Harbor by passing to the Westward of John's Island, continue this **N.** by **E.** ¼ **E.** course until the house and barn on Partridge's Point are almost exactly in range on a bearing of **E.** ¼ **N.** and visible just to the northward of the old earthwork. Now, in eleven fathoms, steer **E.** ¼ **N.**, keeping the range, and this course will lead you safely through between Thurston's Ledges on the north and Beaver Island on the south, in not less than eight fathoms, up to the harbor, where anchor at discretion, in from five to six fathoms, soft bottom, or proceed up the river. *But, wishing to pass to the eastward of John's Island*, when abreast of Crow Island, in twelve fathoms, hard bottom, steer **NE.** by **N.** ¼ **N.**, which course will lead, with not less than nine fathoms, a little to the eastward of the southern point of John's Island. When past this southern point, steer **N.** by **E.**, giving the island a berth of one hundred yards and carrying not less than nine fathoms. Continue this course until up with the range on Partridge's Point, when steer for it, and anchor as before directed.

Vessels beating in or out of this bay in the day-time need only to be told to keep off the shore on either side, as there are no obstructions in the bay until past John's Island. The shores are bold-to, and may be safely approached, in most places, to within fifty yards with not less than three fathoms water. Vessels may stretch from shore to shore, only taking care to give themselves room to go about and not to get becalmed under the land. The Beach Ledges, Knowles' Rocks and the northern shore of John's Island should each receive a good berth. The same caution applies to Thurston's Ledges and the northern and eastern shores of Davis' Island.

At night, it is recommended to vessels beating in or out to go about in ten fathoms on either shore until within eight hundred yards of John's Island. Here, in stretching across, a vessel will strike soundings of less depth than nine fathoms in mid-river, but will very soon deepen again to ten, twelve and thirteen fathoms. The shoal soundings are on a bank with from five to nine fathoms, which runs **S.** from the southern end of John's Island nearly half a mile. Vessels should therefore cross this bank, and go about when they strike six fathoms on the eastern or eight fathoms on the western shore.

This is an excellent harbor of refuge for vessels bound to the westward during a **SW.** gale, as it is so free from obstructions that strangers may enter without fear by following the above directions.

LIGHT-HOUSE.

Name.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Pemaquid Light-house	**43 50 12**	**69 30 22**	**4 38 1.5**	Fixed.	**75**	**14**

TIDES.

The mean rise and fall of tides is nine and three-tenths feet, (9.3 ft.)

DAMARISCOTTA RIVER.

Next to the westward of John's Bay is the mouth of the Damariscotta River, the entrance to which lies between Thrumbcap Island on the east and Linekin's Neck on the west, and is one mile and three-quarters wide. The middle of the entrance is in

Latitude ..... **43° 49′ N.**
Longitude ..... **69° 34′ W.**

Damariscotta River has a general course **N NE.** to the towns of **Newcastle** and **Damariscotta,** which are built upon its eastern and western banks nearly fourteen miles above its mouth. The distance in a straight line from Newcastle to the mouth of the river is twelve and three-quarter miles. The village of Hodgdon's Mills is also situated on this river, on the western bank, at the junction of Linekin's Neck with the mainland.

In describing the approaches and entrances to this river it will be necessary to mention and describe a number of islands lying off the mouth, which, although they do not strictly belong to the Damariscotta, obstruct the entrance to it from the westward, and have rocks and ledges on all sides of them, the position of which it is requisite for the mariner to know.

Coming from the eastward, bound into the Damariscotta, when abreast of Pemaquid Point, **Thrumbcap Island** will be seen to the westward and northward; and just open to the westward of it a small island, about forty feet high and wooded with spruce trees, called Inner Heron Island. Viewed from the southward it appears smaller than it really is, as it lies **N.** and **S.**, and consequently its width only is seen from that direction. Its northern end lies **S.** by **W.** from the southwestern point of **Rutherford's Island,** distant three-eighths of a mile; and its southern end bears **NW. ½ N.** from the southern end of Thrumbcap, nearly three-quarters of a mile distant. Thus the island is situated nearly in the middle of the river, between Linekin's Neck and **Thread of Life Ledges.**

Inner Heron Island.

The wooded shores of **Linekin's Neck** will appear to the southward of Inner Heron Island, its surface undulating, and the heights varying from twenty to one hundred and twenty feet.

A little to the southward of the southern end of Linekin's will be seen a small island with a growth of stunted spruce trees on it. A round, hilly appearance is presented by its southern end, but its northern half is much lower, and groups of houses are seen on the summits. This is Squirrel Island, lying on the eastern side of the entrance to Town's End Harbor.

Squirrel Island.

With its northern end nearly in range with the southern end of **Burnt Island** (to the westward) will appear a long low island, sparsely wooded with spruce trees,—its centre being bare and so much lower than the northern and southern ends as to give the appearance of two islands separated by a narrow strait. This is Fisherman's Island; and its northern end is about eleven hundred yards (a little over half a mile) to the southward of Linekin's Neck, leaving a good broad channel between them, called **Fisherman's Island Passage.** The southern end of Fisherman's Island is thirteen hundred yards **N.** by **E. ½ E.** from Damiscove Island.

Fisherman's Island.

Ram Island is a small low island, with two spruce trees upon it standing together. It lies one hundred yards to the westward of the northern end of Fisherman's Island, and is not visible from the eastward.

In range with the southern portion of Fisherman's Island, and **W.** by **N.** from a vessel coming from the eastward, will appear an island about fifty feet high, with a few spruce trees on its summit; and to the southward of it, a few hundred yards distant, will be seen another island of a very remarkable appearance. Near the northern end of the latter are a few spruce trees, but the rest of the island is bare. The southeastern point of this island terminates in a glaring white rocky bluff, ninety feet high, called **White Point;** and this bluff presents so remarkable an appearance as to render it one of the best landmarks on the coast, as it cannot be mistaken. These two islands are called White Islands,—the northernmost being sometimes called **Jenny's Island;** and a channel with five fathoms passes between the two.

White Islands.

White Point bears **SE. by E. ½ E.** from the southern point of Fisherman's Island, distant one mile.

To the southward of the White Islands will appear another island of moderate height, wooded with the usual growth of spruce trees. This is Outer Heron Island, half a mile long in a **N.** and **S.** direction., with its southern point almost entirely bare and very low. Its shores are very bold, as are those of the White Islands.

Outer Heron Island.

To the southward of Heron Island will appear the southern portion of a large island, bare of trees, called Damiscove Island. Its northern portion is hidden behind Outer Heron Island, but, proceeding to the northward and westward, it is opened from behind the northern point of Outer Heron, and will appear very differently from the southern end. It

Damiscove Island. presents a thickly wooded slope, with a bare crest eighty feet above sea-level rising beyond it to the southward; whereas the southern portion of the island presents an undulating surface covered with grass, and varying in height from two feet above high-water mark to ninety feet at its southern extremity, where a green, bare hill attains this height and slopes regularly towards the sea. On the extreme southern point is built a beacon, as a guide to vessels bound into Damiscove Harbor.

Damiscove lies **N NE.** and **S SW.**, and is a mile and three-quarters long. About the middle it is nearly separated into two islands,—the northern and southern hills being joined only by a narrow isthmus so low that the sea runs over it at high spring tides. This isthmus is only twenty yards wide; and seen at high tides from a distance to the eastward Damiscove looks like two islands,—one wooded and the other bare. On its southern side makes in **Damiscove Harbor**, a long and narrow cove, with eleven feet at mean low water, much used by bay fishermen.

Pumpkin Island. Just clear of the southern end of Damiscove will appear a bare islet, about forty feet high and surrounded by ledges. It is called Pumpkin Island, and the following bearings and distances will be of use to the mariner who finds himself in this vicinity; for this is the outermost of all the islands between Monhegan and Seguin: From

	Miles.
Monhegan, W. by N. ½ N.	11 ⅛
Pemaquid Point, SW.	5 ⅝
Outer Heron Island, S. by W. ½ W.	1
Damiscove Point, (southern end of Damiscove,) E. by S. ½ S.	1 ⅛
Seguin Island, E. ½ N.	**nearly** 8

A low bare islet lies about two hundred yards south from the southern end of Linekin's Neck, and is called **Green Island.**

Vessels bound into this river from the eastward pass between Thrumbcap and the White islands and turn to the northward, passing between Inner Heron Island on the east and Linekin's Neck on the west. They may pass to the eastward of Inner Heron Island, between it and the southeastern end of Rutherford's Island, but the main channel is to the westward.

Linekin's Neck, forming the western shore of the lower part of Damariscotta River, is a peninsula three miles long and three-quarters of a mile broad, separating this river from Linekin's Bay to the westward. Its general direction

Linekin's Neck. is **NE.** by **N.** and **SW.** by **S.**; and when past its southern end it is seen that the land is mostly wooded (though there are one or two clearings) and the surface undulating,—varying in height from twenty to sixty feet.

Three-quarters of a mile above the southern point of the neck a long and narrow cove makes in a northerly direction for nearly seven-eighths of a mile. It is called Little River, and is used by vessels of light draught only. Near

Little River. its mouth it runs between two wooded hills,—the easternmost eighty feet high, with a gentle slope to the westward, the other one hundred and twelve feet high and quite steep; but after passing between these hills it runs through lower land, which is mostly cleared and cultivated. The eastern side of the entrance to Little River is formed by a low islet, about a quarter of a mile long, called **Reed's Island,** which is joined to the mainland by a reef of rocks at low water.

From Little River to the northward the shores of the neck are high, steep and thickly wooded. The land varies in height from sixty to one hundred and sixty feet, and slopes precipitously towards the water. Heavy spruce and pine growth covers the surface.

Farnum's Point, sometimes called **Farnum's Head**, nearly two miles above Little River, is a steep, wooded bluff, over eighty feet high; and here the land turns to the northwestward and runs for about half a mile to **Hodgdon's**

Farnum's Point. **Mills**, which is quite a settlement, situated on the shores of the cove formed by the junction of the eastern side of Linekin's Neck with the mainland. Quite a lumber trade goes on here,—the mills being all saw-mills worked by water-power furnished by a large salt-water pond.

On the eastern side of the river, after passing Inner Heron Island, the western shore of Rutherford's Island is reached. The southeastern point, as before described, is low and sparsely wooded; and a little over half a mile to the

Rutherford's Island. northward of it there makes in, in a **NE.** direction, a large and deep cove, called **Christmas Cove.** This deep indentation nearly separates the southeastern part of the island from the main body and forms it into a long narrow peninsula. Christmas Cove is three-quarters of a mile long, and it affords good anchorage. Seven fathoms may be carried several hundred yards past its mouth, and three fathoms can be taken well into the cove.

The southwestern point of Rutherford's Island is called **Foster's Point**, and is well wooded but low. The western face is nearly all cleared, cultivated and settled. The crest of the island is wooded, but the slopes towards the west are gentle, and are mostly under cultivation.

Rutherford's Island is separated from Bristol Neck by a narrow passage, nearly dry at low water, called **The Gut.** The southern point of Bristol Neck is covered with a scattered growth of pines, and the land rises very gently

Bristol Neck. from the point to the northward; but on the western side of the neck (which forms the eastern shore of Damariscotta River, opposite Hodgdon's Mills) the shore is steep, thickly wooded, and nearly a hundred feet high. From its southern end it runs to the northward for nearly three-quarters of a mile, where, turning to the westward, and then to the southward, it forms a large cove half a mile long and about a quarter of a mile broad, called Jones' Cove.

Ten feet at low water may be taken well into **Jones' Cove.** The western point of its entrance, called Jones' Point, is formed by a thickly wooded bluff point; and thence the land runs about **N.**, nearly a mile and a half, to the entrance to The Narrows. This part of the eastern shore of the river is of a varied character; and midway between the southern point of the peninsula and The Narrows there is quite a large space of cleared land with several houses on the shore. The slope of the surface is very gentle, affording good opportunities for agriculture; but both north and south of this cleared spot the land is steeper, higher, and covered with trees. **Jones' Point.**

On the western side of the river the shore runs about **N.** by **E.** from Hodgdon's Mills for about three-eighths of a mile, and then turns to the westward, forming a deep cove with good anchorage and tolerably bold shores, called Meadow Cove. The land is cleared and settled. Hence to The Narrows the western shore partakes of the same character,—cleared slopes alternating with steep wooded declivities; and the land varies in height from one hundred to one hundred and sixty feet. **Meadow Cove.**

In the middle of the river, a mile and a half above Hodgdon's Mills, is an island of peculiar appearance, which, when seen from the southward, appears bare, except on the crest, where thick woods appear. The land rises very gradually to the summit, which is over one hundred feet high. This is Webber's Island, by some called **Fort Island.** It lies **N.** and **S.**, is nearly eight hundred yards long, and of an oval shape. Although its southern slopes are bare and have a gentle inclination towards the water, the northern face is very thickly wooded and very steep,—giving the appearance, when seen from the northward, of a round, high and heavily wooded bluff. On its southern point is an old block-house, from which the point has received the name of **Fort Point.** **Webber's Island.**

Webber's Island so contracts the main channel of the river as to leave a passage only an eighth of a mile wide between its southern end and the eastern shores of the river. This passage is called The Narrows, and six fathoms at low water may be carried through it; but the channel is somewhat obstructed and the tidal current runs very fast, especially on the ebb. **The Narrows.**

To the westward of Webber's Island, between it and the western shores of the river, runs a narrow passage called the Back Narrows. Eight feet at low water may be taken through this channel, but it is so very crooked, narrow and dangerous as to render it in the highest degree unsafe for strangers. It is almost closed at low water by a line of dry ledges making off from the northwestern point of Webber's Island, leaving a channel only thirty yards wide between their northern end and the main shore. This is the shoalest part of the channel,—three fathoms being found everywhere else through its whole length. Behind the northwestern end of Webber's Island the western shore of the river runs into a small cove, nearly dry at low water, called **Wheeler's Cove,** of no importance. **Back Narrows.**

After passing through The Narrows, you will pass to the eastward of Webber's Island and to the westward of a low sparsely wooded island. The latter lies off the northern end of the long peninsula on the eastern side of the river, and is joined to it at low water by dry ledges. Passing to the northward of it, another island, quite low and thickly wooded with a variety of trees, is opened. These two islands are called Plummer's Islands; and between the two is a passage which leads to the southward behind the long peninsula just mentioned, between it and Bristol Neck. Thus is formed a narrow cove, called **Seal Cove,** nearly a mile and a half long, which heads near the northern end of Jones' Cove, and is separated from it by a narrow neck of land only two hundred yards wide. Three fathoms at low water may be taken into it three-quarters of a mile from its mouth, and it affords excellent anchorage. **Plummer's Islands.**

Three-eighths of a mile to the northward of Seal Cove entrance is another cove, on the eastern shore of the river, known as Peter's Cove or Long Cove,—the entrance being eight hundred yards wide between two low wooded points. The crest of the southern point, called **Plummer's Point,** however, attains a height of one hundred and twenty feet about three-eighths of a mile to the southward of the cove. On the northern side of the entrance lies an islet twenty feet high and thickly wooded, called **Peter's Island.** There is no channel between it and the northern shore. Peter's Cove sends off two arms, one to the northward about three hundred yards long, and one to the southward over eight hundred yards long; and both are nearly bare at low water. Twelve feet at mean low water can be safely taken into this cove. **Peter's Cove or Long Cove.**

From The Narrows the general course of the river is **NE.** for two miles to Miller's Island, which lies in the mouth of Clark's Cove. The eastern shores are generally wooded, and the land rises gradually from the water to the crests of the ridges, which are mostly bare of trees and under cultivation. On the western shore the rise is more abrupt, and the slopes are dotted with scattered trees. Bare ledges crop out here and there near the crests of the ridges; but the edge of the shore-line is fringed with trees from Webber's Island to abreast of Miller's Island, and the land varies in height from one hundred to one hundred and sixty feet above sea-level.

Miller's Island, a small, low, sparsely-wooded island, lies **NW.** and **SE.**, in the middle of the river, two miles above The Narrows. Four hundred yards **SW.** from it is another small, low, wooded island, called **Carlisle's Island.** There is not less than eight fathoms water on both sides of Miller's Island. **Miller's Island.**

Half a mile above Peter's Cove is the southern point of Clark's Cove, which is formed by a long bend to the westward on the eastern shore of the river, leaving between Miller's Island and the main a spacious anchorage, three-quarters of a mile long, with from three to five fathoms water and good holding-ground. The northwestern point of this cove, called **McGuire's Point,** is of moderate height and partly wooded. The shores are low, cleared and settled. **Clark's Cove.**

The western shore of the river terminates opposite to Miller's Island in a bare point, called Carlisle's Point, which lies **SSW.** from McGuire's Point,—the distance between them, three-eighths of a mile, being here the width of the river.

Carlisle's Point. Passing between the two a long narrow cove is opened, running to the southward and westward behind Carlisle's Point. This is **Pleasant Cove**, a mile and a quarter long, and unobstructed. Its shores are low, with a very gentle rise to the crests of the ridges, and are mostly under cultivation. Twelve feet at low water may be carried nearly a mile up this cove.

Lowe's Cove opens on the northern side of McGuire's Point, and is about eight hundred yards long and one hundred and fifty wide. Its course is **E.** and **W.**, and it is dry at extreme low tides.

On the western side of the river the shore has a general course **NE.** by **N.** for one mile and three-quarters, from Pleasant Cove to Salt Marsh Cove, which lies on the western shore, and is dry at low water. The shore between it and Pleasant Cove is generally steep and high, and the land in many places bare. The shore-line, however, is fringed with

Salt Marsh Cove. trees, behind which rise the cleared slopes, and beyond these are the wooded crests of the ridges. The northern side of the entrance to Salt Marsh Cove is formed by a steep hill, two hundred and twenty feet high, with its crest bare, but the slopes dotted with scattered trees. The southern side of the entrance is formed by a thinly wooded point about sixty feet high, its summit bare of trees but under cultivation, with one or two houses on it.

To the northeastward of the entrance to Salt Marsh Cove, nearly half a mile distant, are two small islands lying close to the western shore. The southernmost is a mere rock, with one or two trees on it; the other is about one hun-

Merry Island. dred and fifty yards square, and thickly wooded. It is called Merry Island, and there is no passage between it and the western shore.

From Merry Island steep wooded bluffs extend to the northward half a mile to **Briar Cove**, a small cove, dry at low water, making in on the western shore.

The eastern shores of the Damariscotta, from Lowe's Cove to the northward, are of much the same character as the western shores, being composed of steep bluffs, partly wooded and partly under cultivation, until you come up with Kelsey's Point, nearly abreast of Merry Island. Hence to the northward the slopes are much more gradual, and the land nearly all cleared, settled and cultivated.

Kelsey's Point is low and bare of trees near the shore-line, but the land behind it rises abruptly to a height of one hundred and sixty feet. A long fish-weir extends out just to the southward of the point; and on its northern side a

Kelsey's Point. large semicircular cove makes in, called **Mear's Cove.** Its northern point is called **Lower Fitch's Point;** and the cove affords excellent anchorage in from three to five fathoms.

One mile and three-quarters above Lowe's Cove a long low point makes out from the eastern shore, diminishing the width of the river to three hundred and fifty yards. This point is partly bare and partly wooded, with a woody crest sixty feet above high-water mark. It is called Fitch's Point; and from its northern extremity, (which is low and thickly

Fitch's Point. wooded,) opposite to Briar Cove, a line of bare ledges extends to the northwestward, which again contracts the channel to a width of only two hundred yards. Through all of these narrow channels the tidal current runs with great velocity. The southern end of Fitch's Point is known as Lower Fitch's Point, mentioned above.

On the northern side of Fitch's Point is a shallow cove, called **Fitch's Cove**, of no importance. Three-

Whitey's Point. quarters of a mile above this cove is a low flat point, called Whitey's Point; and on the northern side of it makes in a small cove, bare at low water, called **Whitey's Cove.**

Three-quarters of a mile above Whitey's Cove, and nearly a mile and three-quarters above Fitch's Point, is a small cove, bare at low water, called Prentiss' Cove. It is on the eastern shore of the river, two miles and a half below

Prentiss' Cove. Newcastle Bridge, and is easily known by a small, low, rocky island with a few scattered trees upon it, lying exactly in the middle of the entrance.

From Briar Cove to the northward the western shores of the river are nearly all cleared. The land in most places rises very gradually to the crests of the ridges; but here and there a steep bluff is met with, its slopes and crests marked by bare outcropping ledges. Houses and cultivated fields crown the summits and occupy the sides of the hills; and proceeding up the river the land on both sides is seen to be more cultivated and better settled, until you reach the towns of Newcastle and Damariscotta.

Half a mile above Briar Cove is a large but shallow cove called **Dodge's Cove**; and just beyond this another, called **Little Cove**, which latter is just opposite to Whitey's Point. About half a mile above Little Cove is another cove,

Dodge's Point. also called **Dodge's Cove**,—the round high headland separating them being known as Dodge's Point. On the chart these coves are called **Upper Dodge's Cove** and **Lower Dodge's Cove.**

On the northern side of the Upper Dodge's Cove is a bluff point, with a thin growth of trees along its southern shore, called Perkins' Point, two miles and a quarter above Briar Cove and two miles below Newcastle Bridge. It is one

Perkins' Point. hundred feet high, mostly cleared and cultivated. A brick-kiln and yard occupy a portion of the low land on its northern side, and several wharves are seen along its eastern face.

Above the bare ledges off Fitch's Point the channel is clear for two miles and three-quarters, when it is again contracted by an island and two bare ledges occupying the middle of the river. The island is called Hog Island, and is two and three-quarter miles above Fitch's Point and one mile and a quarter below Newcastle Bridge, and is low, of irregular

Hog Island. shape, and thinly wooded. At low water it is joined to the eastern shore by dry flats; and nearly three hundred yards to the westward of it lie two bare ledges surrounded by extensive shoals. These rocks are

known as **Goose Ledges**, and the channel runs to the westward of them; but the width of the whole passage is only three hundred and fifty yards. Hog Island lies off the mouth of a large but shallow cove, on the eastern bank of the river, called **Huston's Cove.**

The northern point of the entrance to Huston's Cove is called Hall's Point. It is a low point, about a mile below Newcastle Bridge, and nearly opposite to **Little Point**, on the western bank. The channel is here less than a hundred yards wide, and the whole width of the river at high water is but three hundred yards. **Hall's Point.**

Just above Hall's Point, and on the southern side of the town of Damariscotta, is a large but shallow cove, called **Day's Cove**, dry at low water. Part of the wharf-line of the town occupies its eastern and southern shores.

Thirteen feet at mean low water can be taken up as far as the Goose Ledges, but only ten feet can be carried to Newcastle, and that through a channel so narrow as to be impracticable except with a very favorable wind.

Newcastle, situated on the western bank of the river, is a town of eighteen hundred inhabitants, and the principal business is ship-building and the lumber trade. **Damariscotta**, on the eastern bank, has fourteen hundred inhabitants; and the two towns are connected by **Newcastle Bridge**, which is a little over one hundred yards long.

DANGERS

IN APPROACHING AND ENTERING DAMARISCOTTA RIVER.

I. ***Coming from the Eastward.***—Vessels from the eastward usually steer between the White Islands and Inner Heron Island. The first danger met with on the course for the entrance to the river is Pemaquid Ledge, (already described on page 353,) which is marked by a spar-buoy, painted red and black in horizontal stripes, placed off its south-eastern side in six fathoms water. The ledge lies about a mile and an eighth **SW.** $\frac{1}{8}$ **S.** from Pemaquid Light-house and about sixteen hundred yards **SW.** by **S.** $\frac{1}{4}$ **S.** from Pemaquid Point, and has sixteen feet at mean low water and fourteen at low spring tides; but this, however, is only in one small spot,—the rest of the ledge having nothing less than four fathoms. ***Pemaquid Ledge.***

Pumpkin Island Eastern Ledge has sixteen feet at mean low water, and lies eight hundred and fifty yards **SE.** by **E.** from Pumpkin Island and one mile and a half **S.** from Outer Heron Island. It is not buoyed, and does not show itself except in heavy weather; and is only in the way of vessels which keep outside of everything, steering for the southern end of Damiscove. ***Pumpkin Island Eastern Ledge.***

Outer Heron Island Ledge has fifteen feet at mean low water and thirteen at low spring tides. It bears **E.** by **S.** $\frac{3}{4}$ **S.** from the southern point of Outer Heron Island, one mile distant, and is marked by a spar-buoy, painted red and black in horizontal stripes, placed in six fathoms water just to the eastward of the shoal of the ledge.

After passing Thrumbcap Island, you may go either to the eastward or westward of Inner Heron Island; but the main entrance is, however, to the westward. If you pass to the eastward, the eastern shore of the island must be kept aboard, to avoid the shoals surrounding *a small bare rock* lying a quarter of a mile **E.** from the southern point of Heron Island; or else the western shores of Thrumbcap and the Thread of Life Ledges must be kept aboard until you are nearly up with Turnip Island.

Two rocks, with six feet at mean low water and four feet at low spring tides, lie off the eastern shore of Heron Island, distant two hundred and seventy-five yards, and a little over two hundred yards **N NE.** and **S SW.** from each other. They are easily avoided by keeping either the eastern or western shores aboard; but if bound in by the main channel, the first obstruction met with, after passing Thrumbcap, is a small, round, bare rock, called The Bull-Dog. It lies three hundred yards **S SW.** from Inner Heron Island, and has shoal water extending one hundred yards to the southward. To the northward, between it and the island, lies a shoal, bare at extreme low tides, called *Bull-Dog Ledge.* ***The Bull-Dog.***

Passing to the southward of The Bull-Dog and continuing the course towards Reed's Island, there will be seen to the northwestward a red spar-buoy. This is off the southwestern end of Inner Heron Island Ledge, in thirty feet water, and is marked No. 2. Inner Heron Island Ledge has two feet at mean low water, is dry at low spring tides, and lies **W.** $\frac{3}{4}$ **S.** from the southernmost point of Inner Heron Island, over four hundred yards distant. ***Inner Heron Island Ledge.***

The western shore of Inner Heron Island should receive a berth to the eastward of at least three hundred and fifty yards, to avoid *a shoal which makes out* from about the middle of the island. Linekin's Neck is quite bold, but vessels standing across the channel towards the neck must be careful, when nearing the southern end of Reed's Island, to give the island a berth to the northward of not less than five hundred yards, to avoid *a bad rock, bare at three-quarters ebb*, which lies in the middle of the entrance to Little River, nearly three hundred yards from the shore of Linekin's Neck. This rock is not buoyed.

After passing Inner Heron Island, vessels in beating must be careful to avoid *a rock with fourteen feet at mean low water and twelve at low springs*, which lies midway between the northern point of Inner Heron Island and the entrance to Christmas Cove. It is nearly seven hundred yards **NE.** by **N.** $\frac{1}{2}$ **N.** from the former.

After passing Christmas Cove there is a clear channel until you are nearly up with The Gut. There is *an eight feet ledge* lying off the entrance to The Gut, about two hundred and fifty yards from the shore of Rutherford's Island, which is not buoyed.

Opposite to the entrance to The Gut, and on the western bank of the river, is **Farnum's Point**, or **Farnum's Head**, as it is sometimes called; and just to the northward of this point, and between it and Hodgdon's Mills, is a bad kelp ledge making out from the shore. It is bare at mean low water and is out two feet at low spring tides. It is called Kelp Ledge, and its eastern end is about one hundred and fifty yards from shore. It is much dreaded by coasters and fishermen, and should have a buoy upon it.

Kelp Ledge.

After passing Hodgdon's Mills and coming abreast of Meadow Cove, a black spar-buoy will be seen ahead. This is on Western Ledge, which lies exactly in the middle of the river, about three-eighths of a mile (six hundred and fifty yards) to the southward of Webber's Island. It is dry at low spring tides and awash at mean low water; and the buoy, which is marked No. 1, is placed in three fathoms about one hundred yards to the southward and eastward of the ledge. Vessels usually pass to the eastward of it; but as there is equally good water on both sides of the rock, shipmasters will do well to bear in mind that they may safely consider this buoy as an obstruction buoy, and pass it on either hand, according as the wind or tide serves. Those passing to the westward of it should remember that the shoal water of the ledge extends to the northward from the buoy nearly two hundred and fifty yards; and therefore, in passing between it and Webber's Island, the buoy should receive a berth of three hundred yards to the southward.

Western Ledge.

After passing Western Ledge, a red spar-buoy will be seen close to the eastern shore of The Narrows. It is on Eastern Ledge, which lies near the southern entrance to The Narrows, about sixty yards from the eastern shore, has three feet at mean low water or about one foot at low spring tides, extends **N NE.** and **S SW.**, and is one hundred yards long. The buoy, which is marked No. 4, is placed in four fathoms just off the northern end of the ledge, and vessels may go close to it, passing to the westward, with not less than three fathoms water. Light-draught vessels may go between this ledge and the eastern shore of The Narrows, carrying not less than ten feet, as this shore is very bold, and may be approached close-to with twelve feet at low water.

Eastern Ledge.

Northern Ledge lies at the northern end of The Narrows, has five feet at mean low water, and is not buoyed; but a buoy has been recommended. It is about one hundred yards square, and bears from Fort Point **E NE.** two hundred and fifty yards distant, and one hundred yards **N. ½ E.** from the northeastern point of The Narrows. This is a very dangerous ledge, the more so that it is not buoyed. It may be avoided, however, by keeping the eastern shore of Webber's Island aboard, giving it a berth of one hundred and eighty yards after passing Fort Point until you are past the small cove which makes in on the northern side of that point. The ledge is then well to the southward.

Northern Ledge.

The three rocky islets lying near the eastern shore of the river, opposite Webber's Island, are surrounded by shoal water, and must receive a berth to the eastward of one hundred and twenty yards. Three fathoms at low water may, however, be carried to the eastward of them; but the passage is crooked and obstructed by bad rocks, and is not recommended.

After passing to the northward of Webber's Island no dangers are met until you are up with Carlisle's Island, the low wooded island lying off the western shore, near Miller's Island. It should receive a berth of one hundred and fifty yards to the westward to avoid the ledges on its eastern side. Vessels passing to the southward of Miller's Island, into or out of Clark's Cove, must give the southern point of the island a berth of two hundred and fifty yards, to avoid the long ledge which makes off from it.

After passing Miller's Island there will be seen ahead a long line of rocks, dry at low water, extending along the western shore of the river. These are the Pleasant Cove Ledges, extending from the western point of the entrance to Pleasant Cove in a **NE.** by **N.** direction for half a mile. The northern end of this line of ledges is a quarter of a mile from the western shore and immediately opposite to the mouth of Lowe's Cove. These ledges may be approached on their eastern side within one hundred yards anywhere along their whole length, and their northern point may be passed either to the eastward or the northward within seventy-five yards. The main body of the ledges is connected with the western shore by flats, dry at extreme low tide; but there is a cove to the westward of the northern point, called **Wadsworth's Cove**, in which good anchorage may be had in sixteen feet at low water, soft bottom. This cove may be advantageous for vessels bound up or down, with light winds, when they meet the adverse tide and are not able to get into Clark's Cove.

Pleasant Cove Ledges.

The next obstruction met with, after passing Pleasant Cove Ledge, is *a small bare rock surrounded by shoal water*, lying one hundred and sixty yards off the western shore, three-quarters of a mile above Pleasant Cove Ledges and three-eighths of a mile (over seven hundred yards) below the entrance to Salt Marsh Cove. There is no passage between it and the western shore; but it may be approached, however, on its northern and eastern sides within one hundred yards with not less than five fathoms.

Passing this rock, there will be seen ahead, near the eastern bank, a red spar-buoy. This is on the western side of Kelsey's Ledge, which lies two hundred and twenty-five yards from the eastern shore of the river, and bears from Kelsey's Point **SW.** by **W.** ¼ **W.**, three hundred yards distant. The buoy is marked No. 6, and is placed on its western side in four fathoms water. There is, however, a good channel about one hundred yards wide to the eastward of the ledge with not less than four fathoms water. Kelsey's Ledge has three feet at mean low water and one foot at low spring tides. ***Kelsey's Ledge.***

In passing between Kelsey's Point and Merry Island keep the former aboard, to avoid the ledges which make off from the southern end of Merry Island one hundred and seventy-five yards and from the western shore of the river three hundred and fifty yards. The eastern shore of Merry Island is, however, quite bold-to.

Off the southern end of Fitch's Point, a little over one hundred yards from shore, lies a small rock, bare at low water, with shoal water fifty yards to the westward of it. All of this point is shoal, and several rocks lie off its western face. They are known under the common name of Fitch's Point Rocks, and to avoid them, keep the western shore of the river aboard, or give the eastern shore a berth of two hundred and fifty yards to the eastward. ***Fitch's Point Rocks.***

A small bare rock lies off the entrance to Briar Cove, but it is quite close to the shore, and is bold-to on its eastern side. It is therefore not likely to be troublesome to vessels.

The Ledges, a very dangerous line of rocks, is the worst obstruction in the Damariscotta River. It is composed of four or five bare rocks, which at low water are united into one large ledge, extending from the northern end of Fitch's Point in a **N NW.** direction four hundred yards,—thus diminishing the width of the river to about one hundred and seventy-five yards. The western shore is, however, quite bold-to. The ebb-tide sets directly on to these ledges, and the current rushes through the narrow passage, which here forms the channel of the river, with great velocity. Great care must be taken in coming up the river on the flood to hug the western shore closely, to avoid being set on to the western point of The Ledges. Once by this point the current will itself lead clear of all danger. The same precaution must be carefully observed in coming down the river on the ebb-tide, to avoid being set on to the northwestern end of the rocks, upon which the tide sets exactly. This is a dangerous passage, and should not be attempted by strangers unless with a good free wind and on the first and last quarters of either tide. Coming down the river with a good wind, take the last quarter of the ebb to pass The Ledges, which will give time to reach The Narrows at or before slack water. Going up, take the first of the flood past The Ledges, unless familiar with the set and strength of the current and pressed for time. In such a case take half-flood through The Narrows and last quarter-flood past The Ledges, which will carry you to Newcastle by high water. ***The Ledges.***

After passing The Ledges the channel inclines towards the eastern shore, but the shores are not so bold as those to the southward of The Ledges. A little over half a mile beyond them there is *a small bare rock, lying on the eastern side of the river*, one hundred and fifty yards from shore. If the vessel be of heavy draught (twelve feet or more) this rock should receive a berth of one hundred yards to the eastward; but light-draught vessels may go close to it. Beyond this rock both shores are shoal,—the eastern shore being still the boldest. Three fathoms only at low water can be carried to Perkins' Point, two miles above The Ledges.

There is *a shoal with three feet at low water* lying off the eastern shore, about three-quarters of a mile above the small bare rock just mentioned, and two hundred and fifty yards from shore.

Off Perkins' Point the flats extend to the eastward over four hundred yards with less than six feet water. There are no shoals, however, outside of the two-fathom line. The lead is the best guide for vessels in keeping off either shore, for no intelligible description can be given of the course of the channel or of the dangers which lie on both sides of it. It may be remarked, however, that after passing Perkins' Point the western shore becomes the boldest, and two-thirds of the width of the river is occupied by extensive flats making off from the eastern shore.

Nearly three hundred yards **NW.** from Hog Island lie two bare rocks **NE.** and **SW.** from each other, and surrounded by ledges dry at low water, called the Goose Ledges; and the southern dry rock is called **Goose Rock**. The channel runs to the westward of them, and they should receive a berth of one hundred and fifty yards. ***Goose Ledges.***

After passing Goose Ledges the channel runs between flats nearly all dry at low water. No intelligible description can be given of its course and the dangers on either side; and the chart is the best guide for the former and the lead for the latter Ten feet at low water can be carried up to Newcastle through a very narrow channel.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING DAMARISCOTTA RIVER.

I. ***Coming from the Eastward.***—From outside of Monhegan the course for the entrance to the Damariscotta is **NW.** ¾ **W.** until Foster's Point opens to the westward of Inner Heron Island and the

Sailing Directions--Damariscotta River. southern end of the latter bears **N NE.**, one mile distant. On this course the least water is fourteen fathoms. The course for vessels having come through the Muscle Ridges, and bound for the Damariscotta, is, when between Monhegan and Allen's islands, **W. ¾ N.**, to the same bearing of Inner Heron Island. On this course the least water is twenty-four fathoms.

From this bearing and distance steer **N. ¼ E.**, carrying not less than thirteen fathoms water, until you are abreast of the red spar-buoy off Inner Heron Island Ledge, which leave to the eastward three hundred and fifty yards off, and steer **N.** by **E. ¾ E.**, carrying not less than five fathoms, past Inner Heron Island, Christmas Cove, Foster's Point and Rutherford's Island, until up with the northern end of Farnum's Point, which pass to the eastward at a distance of two hundred and fifty yards; and, if *bound to Hodgdon's Mills*, steer **NW.** by **N. ¼ N.**, carrying not less than five fathoms, and anchor at discretion, when off the village, in from two to five fathoms, soft bottom.

But, if bound up the river, when the northern end of Farnum's Point bears **N NW.**, with six fathoms water, steer **N. ½ W.**, keeping the eastern shore aboard and carrying not less than seven fathoms water; and when past Hodgdon's Mills there will be seen ahead the black buoy on Western Ledge. Continue the course **N. ½ W.** until within three hundred yards of this buoy and the block-house on Fort Point bears **N. ¾ E.**, with ten fathoms water, when steer **N.** by **E. ¼ E.**, carrying not less than nine fathoms, to the entrance to The Narrows. When abreast of Eastern Ledge buoy, in about ten fathoms water, pass to the westward of it at a distance of seventy-five yards; and the course thence through The Narrows is **NE.** by **N. ½ N.** with not less than five fathoms. The course must be varied to the eastward or westward according as the tide is flood or ebb; and if made good, leaves Northern Ledge a hundred yards to the eastward. Continue it until past Plummer's Islands and the entrance to Seal Cove is fairly open, bearing **S. ¾ E.** Then steer **NE.** by **N.**, which will lead, with not less than seven fathoms, to the anchorage in Clark's Cove. *But, wishing to pass to the westward of Miller's Island and continue up the river*, when, on the course **NE.** by **N.**, the westernmost point of Miller's Island bears **N. ¼ E.**, and you are in about ten fathoms, steer for it, carrying eight and nine fathoms, until abreast of the southern end of Carlisle's Island, in nine fathoms. Pass to the eastward of this latter island two hundred yards off, and steer **N.** by **W. ½ W.**, carrying not less than seven fathoms, and passing nearly two hundred yards to the westward of Miller's Island. Continue this course until past Lowe's Cove, passing two hundred and fifty yards to the eastward of Pleasant Cove Ledges. When past **Wentworth's Point**, (the northern point of Lowe's Cove,) and in mid-river, steer **NE.** by **N. ¾ N.** This course continued for about one mile will carry you up mid-channel, in not less than seven fathoms water, to the buoy on Kelsey's Ledge, and past the mouth of Salt Marsh Cove. When past the buoy, (which must be left about two hundred yards to the eastward,) and Kelsey's Point bears **E. ¼ S.**, four hundred yards off, steer **E.** by **N. ½ N.**, between the Merry Island shoals and the eastern shore, carrying not less than eight fathoms; and when the centre of Merry Island bears **N NW.**, with eight fathoms, steer **N.** by **E. ⅛ E.** for seven-eighths of a mile, or until you are abreast of The Ledges. This course has not less than six fathoms, and leaves Fitch's Point Rocks and The Ledges over a hundred yards to the eastward. Now, when abreast of the northwestern end of The Ledges, and about midway between them and the western shore, in seven fathoms water, steer **NE.** by **E.** for a few hundred yards, carrying not less than seven fathoms, until past The Ledges; when steer **NE.** by **E. ¾ E.** towards Whitey's Point, on the eastern shore, carrying not less than eight fathoms water.

Remember that it is a **NE.** by **E.** course *made good* that leads safely past these ledges. The course steered must be varied according to the state of tide.

Continue the **NE.** by **E. ¾ E.** course for three-quarters of a mile, and bring the bare summit of the bluff on Perkins' Point to bear **NE. ¾ N.**, when it will be seen exactly in range with the eastern-most extremity of the point below it, and you will have eight fathoms. Then steer **NE.** one mile, carrying from three to seven fathoms, until abreast of the southern point of Prentiss' Cove, when edge off a little to the eastward, steering **NE. ¾ E.** for three-eighths of a mile, (seven hundred yards,) to avoid the flats off Perkins' Point. Continue this course, on which there will not be less than sixteen feet, until past the pitch of that point; when there will be seen a brick-kiln on the long pier making out just to the northward of the point. Bring this pier in range with the western end of the large barn on the higher land behind, when the two objects will bear **NW. ¾ N.** and there will be sixteen feet water. Then alter the course to **N.** by **E.**, and steer that course for six or seven hundred yards,

carrying not less than fourteen feet; after which steer still more to the westward, gradually approaching the western shore, to avoid the extensive flats which here make off from the eastern side of the river. Continue to hug the western shore, (never approaching it nearer than one hundred and fifty yards, however,) carrying not less than thirteen feet, until up with the Goose Ledges. Pass to the westward of these, giving them a berth of one hundred and seventy-five yards, and steer **NE. ¾ E.** for a white spire, with a clock-dial on it, in the town of Damariscotta. Continue this course, with nothing less than ten feet water, for about five-eighths of a mile, (twelve hundred yards,) until Newcastle church-spire (which is painted brown) bears **N.** by **E. ¾ E.** and you are in fourteen feet water; when steer for the spire, keeping it in range with **Jack's Point** (the long point which makes out near the southern end of the town) until within two hundred yards of the latter. (On this course there is not less than ten feet.) Then alter the course to the eastward just so as to keep clear of the wharf-line, and steer for the western end of Newcastle Bridge. Anchor off the town in three fathoms at low water, (if off the mouth of **The Cove**,) and midway between the two piers, built on the edge of the flats, which mark the eastern and western limits of the channel.

Sailing Directions—Damariscotta River.

DANGERS

IN APPROACHING AND ENTERING DAMARISCOTTA RIVER.

II. ***Coming from the Southeastward by the White Island Passage.***—Vessels coming from seaward may, if they find it more convenient, pass into the Damariscotta by the wide and safe passage between White Islands on the east and Outer Heron Island on the west, and thence between the former and Fisherman's Island. In this channel (which is called the **White Island Passage**) there are several dangers. The first met with is *Pumpkin Island Eastern Ledge*, which leave to the westward. It lies eight hundred and fifty yards **SE.** by **E.** from Pumpkin Island, has sixteen feet at mean low water, and is not buoyed. Passing it, Northeast Ledge is reached, a little over a quarter of a mile **NE.** from the northern end of Pumpkin Island, with eight feet at mean low water and six feet at low spring tides. A little over two hundred yards **N.** from it is *another rock, with ten feet at mean low water;* and four hundred yards farther to the northward is still *another, with eleven feet.* In fact, all the space between Pumpkin Island and Outer Heron is very much obstructed, and strangers must be careful to give both islands a wide berth in passing to the eastward of them.

Northeast Ledge.

Outer Heron Island Ledge has fifteen feet at mean low water and thirteen at low spring tides. It bears **E.** by **S. ¾ S.** from the southern point of Outer Heron Island, one mile distant, and is not buoyed. Pass to the westward of it in using this channel.

About midway between Outer Heron Island and Pumpkin Island are two ledges, dry at low water, called Heron Island South Ledges, lying **S.** and **S.** by **W. ¼ W.** from the middle of Outer Heron, distant, respectively, six hundred and fifty and eleven hundred and fifty yards. They are not buoyed, but are dangerous only to vessels passing between Heron and Pumpkin islands or to vessels beating in or out. Strangers will never attempt the former passage; and it is, therefore, only necessary to remark that, in beating, a vessel must not stand farther to the westward than to bring the eastern end of Outer Heron Island to bear **N. ¼ W.** This will avoid all of the *Pumpkin Island Ledges* as well as the Heron Island South Ledges.

Heron Island South Ledges.

After passing Outer Heron Island Ledge the channel is clear until up with Hypocrite Ledge, sometimes called *Hypocrite Reef.* It is formed by two long, narrow and bare islets from ten to twenty feet high, connected at low water by dry shoals and breakers. Its southern end lies five-eighths of a mile (thirteen hundred yards) **N. ½ W.** from Outer Heron Island, and is marked by an iron spindle with cage on top,—all being painted black. From this spindle the ledge extends in a **N NE.** direction about seven-eighths of a mile along the whole length of Fisherman's Island, and both sides are quite bold-to. Seven fathoms may be carried between it and Fisherman's Island by keeping the western side of the reef close aboard, to avoid the dry ledges to the eastward of the island.

Hypocrite Ledge.

After passing Hypocrite Ledge the channel is clear to *Inner Heron Island Ledge,* which lies to the westward of the southern end of Inner Heron Island. For description of this and the other dangers common to all channels into the Damariscotta, see pages 361–363.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING DAMARISCOTTA RIVER.

II. ***From the Southeastward, through the White Island Passage.***—When Pemaquid Lighthouse is made, bring it to bear **NE.** by **N. ¾ N.** and run for it until the southern point of Damiscove Island (called **Damiscove Point**) bears **NW. ½ N.**, when steer **N. ½ W.** for the southern end of Line-

kin's Neck. This course will carry you through between White Islands and Outer Heron Island in not less than nine fathoms water. When abreast of the northern point of the southernmost White Island, with about twenty fathoms water, steer **N NE.**, which will lead you up to the red buoy off Heron Island Ledge with not less than thirteen fathoms water. Pass to the westward of this buoy at a distance of three hundred and fifty yards, and steer **N.** by **E.** $\frac{3}{4}$ **E.** past Inner Heron Island. Above this point follow the directions previously given, (pages 364–365.)

DANGERS

IN APPROACHING AND ENTERING DAMARISCOTTA RIVER.

III. ***Coming from the Westward by the passage between Damiscove and Outer Heron Islands.***—This passage is an excellent entrance for vessels coming from the westward and passing to the southward of Damiscove, as it is wide and deep, (having not less than twelve fathoms,) and the shores of both islands are bold-to. In approaching the Damariscotta outside of Damiscove the first danger met with is Bantam Rock, or *The Bantam*, which is dangerous to vessels bound into the Sheepscot, into Booth Bay, or into the Damariscotta. It bears **SW.** by **S.** $\frac{1}{4}$ **S.** from Damiscove Point, distant a mile and a quarter, and is bare at low water. The shoal of this rock lies **E NE.** and **W SW.**, and is three hundred and seventy-five yards long. Off its southwestern end is placed an iron nun-buoy of the second class, painted red and marked No. 2. This buoy is in deep water about one hundred yards from the rock. It has been recommended that this buoy be superseded by a first-class can-buoy of the same color.

Bantam Rock.

Passing Bantam Rock and the southern end of Damiscove, haul up along the eastern side of the latter; and in doing so there will be seen on the eastern side a group of bare ledges lying to the northward and westward of Pumpkin Island. These are Pumpkin Island Western Ledges, consisting of two small bare rocks surrounded by large ledges dry at low water. The two bare rocks lie **NE.** by **E.** and **SW.** by **W.** from each other, six hundred and fifty yards apart. The southwestern rock is half a mile **NW.** $\frac{1}{2}$ **N.** from the southern point of Pumpkin Island; and from it the shoal water extends **N.** two hundred and seventy-five yards and **S.** nearly four hundred yards. The northeastern rock lies over eight hundred yards **NW.** by **N.** $\frac{1}{2}$ **N.** from the northern end of Pumpkin Island; and from it the shoal water extends **N NE.** two hundred yards and **W.** by **S.** four hundred yards. Neither of these ledges is buoyed; and vessels in passing to the southward of the southern ledge must give it a berth of at least a quarter of a mile.

Pumpkin Island Western Ledges.

In beating in by this passage it is not safe for strangers to go to the eastward of the southwestern point of Outer Heron Island bearing **NE.** by **N.**

After passing the Pumpkin Island Ledges this channel is clear to the Hypocrite, where it joins the White Island Passage.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING DAMARISCOTTA RIVER.

III. ***Coming from the Westward by the passage between Damiscove and Outer Heron Islands.***—The course from Seguin to Monhegan is **E.** $\frac{1}{2}$ **S.**, and this course clears The Bantam, leaving it more than half a mile to the northward. On this course, when the southeastern point of Damiscove Island bears **N.** by **E.** $\frac{3}{4}$ **E.**, nearly two miles distant, and there is about twenty fathoms, steer **NE.** by **N.** $\frac{1}{4}$ **N.**, carrying not less than twelve fathoms water, and passing two hundred yards to the eastward of the black spindle on the southern end of Hypocrite Ledge. Continue this course until up with the red buoy on Inner Heron Island Ledge, which pass to the westward at a distance of three hundred and fifty yards, and proceed as directed on pages 364–365.

DANGERS

IN APPROACHING AND ENTERING DAMARISCOTTA RIVER.

IV. ***By the Fisherman's Island Passage.***—This channel leads to the eastward and westward, between the southern end of Fisherman's Island and the **Wood End** of Damiscove. It is much used by coasters and fishermen, is three-eighths of a mile wide between the lines of three fathoms, and is unobstructed throughout that width. The bottom is very irregular, soundings varying from three to twenty-five fathoms being found on it. Vessels using this channel, coming from the westward, usually pass inside of Seguin and leave the island of Southport about three-quarters of a mile to the northward. This passage is obstructed by several dangers.

Coming from the westward and passing the mouth of the Sheepscot River, intending to go through the Fisherman's Island Passage into the Damariscotta, there will be seen lying just clear of the southern end of Southport Island, called **Cape Newagen**, two bare rocky islets, called The Cuckolds, which are particularly dreaded by mariners who are caught by night or in a fog in their vicinity. They lie about three hundred and fifty yards **S SE.** from **Cape Island**, (the small island which lies close in with Cape Newagen,) and are **E.** and **W.** from each other. They are about one hundred or one hundred and fifty yards in diameter and are quite bold-to; but a heavy sea breaks upon them almost continuously, even in the calmest weather. On the most easterly islet, near its southern end, is built a wooden tripod, fifty-seven feet high,—the upper half covered in and painted black. ***The Cuckolds.***

After passing The Cuckolds there are no obstructions until you are up with Hypocrite Reef, except that from the southern end of Fisherman's Island a ledge extends to the southward with from fourteen to seventeen feet at low water. It is known as Fisherman's Island Point, extends to the southward three hundred and fifty yards, and is not buoyed. It is not dangerous, however, for vessels usually keep over towards the Wood End of Damiscove; and this channel is rarely used by those drawing over twelve feet water. ***Fisherman's Island Point.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING DAMARISCOTTA RIVER.

IV. ***By the Fisherman's Island Passage.***—Vessels using this passage are accustomed to pass to the northward of Seguin and between the Black Rocks and The Sisters; and when abreast of the former, in about fourteen fathoms, hard bottom, you must bring the northern end of Fisherman's Island to bear **E.** by **N.** ½ **N.**, when The Cuckolds will be seen in range with it. Then steer **E.** ¾ **N.**, which will lead you safely through the passage with not less than twenty-nine feet water, and up to the black spindle on the southern end of Hypocrite Reef. When abreast of this spindle, and you are in nineteen fathoms, steer **NE.** by **N.** ¼ **N.** until up with the red buoy on Inner Heron Island Ledge, which leave to the eastward at a distance of three hundred and fifty yards, and proceed as directed on pages 364–365. On the **NE.** by **N.** ¼ **N.** course there will be not less than six fathoms water.

DANGERS

IN APPROACHING AND ENTERING DAMARISCOTTA RIVER.

V. ***Coming from the Westward by the passage between Linekin's Neck and Fisherman's Island.***—This channel is only used by those familiar with these waters. It is over half a mile wide, but is obstructed by a bad sunken ledge exactly in the middle of the passage. It is, however, very useful as a short cut to those who are familiar with the positions of the inshore ledges, and is by them constantly used. Those using it come well inside Seguin and pass between The Sisters and Black Rocks, just as if bound through the Fisherman's Island Passage; but when past The Cuckolds they haul up for Linekin's Neck, and pass to the northward and westward of Fisherman's Island into the river.

The Cuckolds have been already described above; and after passing them there are no obstructions until well into the passage, when there will be seen a red spar-buoy to the northeastward. This is on Gangway Ledge, which lies nearly in the middle of the passage between Linekin's Neck and Fisherman's Island. It has seven feet at mean low water and about five at low spring tides, and is therefore very dangerous to vessels of all classes. It is nearly six hundred yards **S.** from the southwestern end of Linekin's Neck and about six hundred and fifty yards to the northward of **Ram Island.** (This latter is the small island lying close to the northern end of Fisherman's Island, on its western side. See page 357.) There are from three to five fathoms on both sides of this ledge, and it was formerly marked by a buoy with horizontal red and black stripes. As, however, the best and widest passage is on its southern side, between it and Ram Island, and as the northern channel is further obstructed by a dry shoal, called Card's Rock, and by several detached rocks with fifteen and sixteen feet on them, the buoy has been changed to a red one, which you must leave to the northward. This buoy is marked No. 12, and is placed in five fathoms off the southwestern side of the ledge. ***Gangway Ledge.***

When the red buoy on Gangway Ledge is made, there will also be seen another red buoy to the northward of it, but nearer to the southwestern point of Linekin's Neck. This is on Card's Rock, a bare rock, surrounded by shoal water, and with a bad ledge extending to the southward from it two hundred and fifty yards with eleven feet water. On the southern end of this ledge, in five fathoms water, is placed the buoy, which is marked No. 10. The northern channel passes between this buoy and that on Gangway Ledge, but to avoid the detached rocks to the northward and westward of the latter vessels must keep closer to the buoy on Card's Rock. Card's Rock is only about three hundred yards **W.** from the southwestern end of Linekin's Neck. ***Card's Rock.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING DAMARISCOTTA RIVER.

V. ***Coming from the Westward by the passage between Linekin's Neck and Fisherman's Island.***—When abreast of the Black Rocks, bring the northern end of Fisherman's Island to bear **E.** by **N.** $\frac{1}{2}$ **N.**, with The Cuckolds in range with it; when you will be in fourteen fathoms water, hard bottom, and must steer **E.** $\frac{3}{4}$ **N.**, as for Fisherman's Island Passage. But, on this course, when just past The Cuckolds, with Burnt Island Light-house bearing **N.** by **E.** $\frac{1}{2}$ **E.** and the southern end of Damiscove (Damiscove Point) **SE.** by **S. Southerly**, with about twenty-five fathoms water, hard bottom, steer **NE.** $\frac{1}{8}$ **E.** for Linekin's Neck, carrying not less than twenty fathoms. On this course, when the middle of Squirrel Island bears **N.** $\frac{1}{8}$ **E.** and Wood End of Damiscove Island **SE.** $\frac{1}{4}$ **S.**, steer **NE.** by **E.** $\frac{7}{8}$ **E.** for the southern end of Inner Heron Island. This course leads three hundred and fifty yards to the southward of the buoy on Gangway Ledge and carries not less than five fathoms water. Continue it until within two or three hundred yards of the buoy on Inner Heron Island Ledge, and you are in thirteen fathoms, when steer **N.** by **E.** $\frac{1}{4}$ **E.**, and follow the directions given for the river on pages 364–365.

To pass to the northward of the Gangway, keep the northern side of the passage aboard, leave Card's Rock buoy one hundred yards to the northward, and steer **E.** $\frac{1}{4}$ **S.** for the southern point of Green Island, carrying not less than three fathoms water. When about four hundred yards from the island alter the course to the southward, steering about **SE.** by **E.** $\frac{3}{4}$ **E.**, so as to give the point a berth of about one hundred and fifty yards. When past this point, bring the southern point of Inner Heron Island to bear **NE.** by **E.** $\frac{7}{8}$ **N.** and steer for it, carrying not less than five fathoms water, and proceed as above directed.

TIDES.

Corrected Establishment at Damariscotta	$11^h\ 8^m$
Mean Rise and Fall of tides	8.3 ft.
Mean Rise and Fall of Spring tides	8.7 ft.
Mean Rise and Fall of Neap tides	7.9 ft.
Mean duration of Rise	$6^h\ 14^m$
Mean duration of Fall	$6^h\ 11^m$
Rise of highest tide observed	9.7 ft.

CURRENTS.

General information as to the set and velocity of the tidal current only can be given. Its general direction is, of course, up and down the channel, as in other streams, with an augmented velocity for ebb-current owing to the natural fall of the land; but the close vicinity of **The Falls** to Newcastle Bridge works a considerable change in the duration of ebb and flood currents. The water, confined to a narrow channel, which is further obstructed by rocks, pours with great velocity over The Falls and through the bridge, and this velocity continues to be felt for some distance down the river, requiring a strong current of flood-tide to overcome it. Besides, the flood-tide must overcome, by the rise of the water, the elevation of The Falls above the natural bed of the river; and until it has done so the current will continue to flow down river. Thus, the current of ebb commences at the turn of the tide and continues until nearly one-third flood; while the real current of flood begins at about one-third flood and runs up until high water. This peculiarity of the tidal current is felt for several miles below the bridge,—in fact, almost as far down as Clark's Cove. Near the mouth of the river, however, the rise and flow usually begin and end at the same time,—being affected only by the winds and the natural descent of the shores from Newcastle to the mouth of the river.

The unusual duration of the ebb current in the upper part of the river is a point of some importance to vessels bound up, as the whole distance from the entrance to the river to Newcastle is only about fourteen miles; and a vessel taking the first of the flood at the entrance will carry it up with her, unless she has a fresh breeze aft, when she would be apt to meet the ebb above Clark's Cove; but under ordinary circumstances she would be sure to find no retarding current all the way to the town. This peculiarity also admits of vessels of larger draught waiting for half-tide before weighing to proceed up the river, so as to get the strength of the flood current in passing through the narrow channels above The Ledges, where a favorable current is of great importance.

It may not be out of place here to remark that most of the wharves, both in Newcastle and Damariscotta, being dry at low water, piers have been built on the edge of the channel, where heavy-draught vessels may lie at low water and discharge cargo. Two of these (already mentioned on page 365) are constructed opposite **Weir Cove**, and on either side of the deep hole, (see page 365,) which forms here a convenient anchorage. Alongside of the eastern pier ten feet at low water may be carried; but the shoals have now extended out to its southern end, where there is only six feet. Vessels may still, however, use the upper end of the pier. The western pier is placed nearly in the middle of the mouth of the cove, and has twelve feet at low water along its whole length.

A third pier is built on the western side of the channel, about four hundred yards below these and a little over two hundred below Jack's Point, and has also twelve feet at low water along its whole length.

VARIATION OF THE COMPASS.

The magnetic variation in the Damariscotta River for 1879 is 14° 10′ W., with an annual increase of about 2¾′.

LINEKIN'S BAY.

Next to the westward of the Damariscotta River is Linekin's Bay, a commodious harbor with good water throughout its length and breadth; but except as a harbor of refuge it is of no commercial importance, and is seldom used even as an anchorage, as vessels can easily make Town's End Harbor or the Damariscotta. The entrance to the bay is between Linekin's Neck on the east and a round, high, thickly wooded peninsula on the west, called Spruce Point. The bay is two and a half miles long, and runs into the land in a **N NE.** direction. Its width is about one mile, but the entrance is only about eleven hundred yards wide (a little over half a mile) from shore to shore, and the available channel about five hundred,—the latter being much contracted by the dangerous ledges off Spruce Point. Five and six fathoms can be taken up to the head of the bay.

A vessel coming from the eastward and bound into Linekin's Bay will usually pass through the Fisherman's Island Passage, and will open out from behind Fisherman's Island first a moderately high island bearing **NW.**, and wooded with a stunted growth of spruce trees,—its southern end appearing higher than the rest of the island, and assuming a round bluff-like form. This is Squirrel Island, lying in the middle of Booth Bay, and therefore to the westward of the entrance to Linekin's Bay. It is nearly three-quarters of a mile long by eight hundred yards in width, and its shores are tolerably bold-to. The upper end is low, has a very gentle slope towards the northern point, and is mainly cleared and settled. On its western shore enters a deep cove, with from three to seven fathoms water, called **Squirrel Island Cove.** This island is a resort for excursion parties during the summer, and has a number of houses built on its summit, which, however, are occupied only during the summer. **Squirrel Island.**

Spruce Point will open next to the northward, bearing about **N.**, and easily recognizable by its round hilly sides, and by a single bare summit surrounded by trees a little to the northward of the southern end of the point. This summit is called **Big Hill,** is one hundred and forty feet high, and shows against the trees behind it. The point is thickly wooded with spruce and pine. The highest crest is nearly two hundred feet above high-water mark, and, unlike Big Hill, is clothed with a thick growth of trees. The eastern shores are bold-to and the fall of the land somewhat steep. **Spruce Point.**

Nearly in range with Big Hill will appear an islet, lying close in with the southwestern end of Linekin's Neck, and called Negro Island. It lies **NE.** and **SW.**, distant about three hundred and fifty yards from the western shore of the neck, and is nearly six hundred yards long. It is forty feet high, and has a very few spruce trees on it. **Negro Island.**

Passing between Damiscove and Fisherman's Island and running up towards Spruce Point, the southwestern face of Linekin's Neck will appear as low cleared land, with a few houses on it, and backed by wooded slopes. Between this end of the neck and Negro Island is formed a cove with bold shores and good anchorage, called **Card's Cove,** which has from six to nine fathoms water.

Passing between Negro Island and Spruce Point, bound into the bay, there will be seen ahead, bearing about **NE.** by **N.**, a small bare islet lying nearly in the middle of the bay. It is called Cabbage Island, is about a quarter of a mile long and about one hundred yards wide, lies **N.** by **E.** and **S.** by **W.**, and is exactly one mile above Negro Island. **Cabbage Island.**

The eastern shores of Linekin's Bay are formed by the western slopes of Linekin's Neck, which are mostly cleared and settled, and slope regularly back from the water's edge to the crests of the hills,—the latter varying from sixty to one hundred feet high. Behind these cleared and settled lands wooded hills appear, rising in some places two hundred feet above high-water mark. **Linekin's Neck.**

The northern shore of Linekin's Bay is formed by high land partly wooded and partly cleared, and varying from one hundred to one hundred and sixty feet in height, with a few houses near the shore.

Two small islands lie near the head of the bay, the most northerly of which is called Little Island, and is nothing but a bare rock, about one hundred yards south from the northern shore, and surrounded by ledges bare at low water. The southern one is called Fish-Hawk Island, lies two hundred and fifty yards to the southward of Little Island, and is about eighty yards in diameter, with a single tree on its summit. A ledge, bare at low water, obstructs the approach to it on the southern side, but its eastern and western shores are bold-to. There is not less than four fathoms water between it and the western shore of the bay. **Little and Fish-Hawk Islands.**

On the western side of the bay there is a cove with from three to four and a half fathoms water, which is formed by the junction of Spruce Point with the mainland to the northward, and is called Lewis' Cove. It receives the waters of a small stream called **Meadow Brook;** and at the head of the cove rises a bare hill one hundred and sixty feet high, called **Mount Pisgah.** Cabbage Island lies off the mouth of this cove. **Lewis' Cove.**

North of Lewis' Cove the western shores of Linekin's Bay are thickly wooded and rise gradually to a height of one hundred feet,—the woods being pine and hemlock.

DANGERS

IN APPROACHING AND ENTERING LINEKIN'S BAY.

Hypocrite Ledge.

I. ***Coming from the Eastward by the Fisherman's Island Passage.***—Coming from the eastward, through the Fisherman's Island Passage, the first danger met with is Hypocrite Ledge, already described, (page 365.) It lies between the White Islands and Fisherman's Island, and is for the most of its length bare at low water. Its southern end is marked by an iron spindle, painted black, with cage on top.

Fisherman's Island Point.

Passing the Hypocrite, Fisherman's Island Point is reached,—a ledge, with fourteen feet at low water, which makes out from the southern point of Fisherman's Island to a distance of three hundred and fifty yards. It has also been before described, (see page 367.)

Gangway Ledge.

Passing Fisherman's Island Point the course leads towards Spruce Point; and to the northward and eastward, about midway between Fisherman's Island and Linekin's Neck, there will be seen a red spar-buoy (No. 12). This is on Gangway Ledge, which lies nearly in the middle of the passage leading **E.** and **W.** between Linekin's Neck and Fisherman's Island, and is about six hundred and fifty yards to the northward of Ram Island. Seven feet at mean low water and five at low spring tides are found on this rock. (See page 367.) *A fifteen feet shoal* lies three hundred and fifty yards **W.** by **N.** from the buoy.

Card's Rock.

A quarter of a mile **NW.** from the buoy on the Gangway will be seen another red spar-buoy (No. 10), which is on the southern point of the ledge surrounding Card's Rock. This ledge has eleven feet at mean low water and only nine at low springs, and extends two hundred and fifty yards to the southward of the rock and a quarter of a mile from the southwestern end of Linekin's Neck. The buoy is in five fathoms off the southwestern side of the ledge.

Spruce Point Ledges.

After passing Card's Rock and heading up for Negro Island there will be seen, bearing about **N.** by **W.**, a heavy breaker in range with Spruce Point. This is on Spruce Point Ledges, which lie six hundred yards **S.** from Spruce Point and are bare at low water. With the shoal water surrounding them they cover a space about four hundred yards long **N.** and **S.**, extending to within two hundred yards of Spruce Point; and six fathoms at low water may be taken between them and the point through a channel about one hundred yards wide. These ledges are marked by a red spar-buoy (No. 8) placed in thirty feet water about twenty yards from their southern end.

Cabbage Island Ledges.

From the southern end of Cabbage Island the shoal water extends to the southward about three hundred yards, and for most of this distance the ledges are bare at low water. They are generally known as Cabbage Island Ledges; and vessels in standing past the southern point of this island, either to the eastward or westward, should leave it at least four hundred yards to the northward except at low water, when they may approach within two hundred and twenty-five yards of the dry ledge. Both the eastern and western sides of Cabbage Island may be approached within one hundred and twenty-five yards with four fathoms water.

Holbrook's Ledge.

If you are passing to the eastward of Cabbage Island, a bad ledge will be met with in mid-channel, called Holbrook's Ledge, or sometimes *Linekin's Ledge;* but the former is the generally adopted name. It is dry at low water, about two hundred and fifty yards long between the lines of three fathoms, is between five and six hundred yards distant from the shores of the neck and the island, and is not buoyed.

Seal Rocks.

Seal Rocks lie six hundred yards **N.** from Holbrook's Ledge and a quarter of a mile **NE.** from the northern end of Cabbage Island. They are about four hundred yards off the western shore of the bay, on the northern side of the entrance to Lewis' Cove. Four feet at mean low water is found on these rocks; but there is a channel one hundred and fifty yards wide between them and the western shore, through which five fathoms may be taken.

Fish-Hawk Island Shoals.

Fish-Hawk Island is surrounded by ledges, (to which have been given the general name of Fish-Hawk Island Shoals,) and it should not be approached from the southward within less than three hundred yards. Vessels passing between it and the western shore give it a berth of a hundred yards; those passing to the eastward of the island give it a berth of one hundred and fifty yards. Beyond Fish-Hawk Island it is not safe to go unless familiar with the bay, for the northern shore of the bay is shoal except in the northeastern corner, where there is a cove making in to the northward and eastward which has three and a half fathoms water. As a general rule, however, do not go beyond Fish-Hawk Island, but anchor abreast of it, in from three to five fathoms, sticky bottom.

Both the eastern and western shores of Linekin's Bay are bold-to, and may be safely approached along their whole length, except where bare rocks lie off the shore and give warning of the existence of shoal water.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING LINEKIN'S BAY.

I. ***Coming from the Eastward by the Fisherman's Island Passage.***—Through this passage the course is **W.** by **N.** ¼ **N.**, which carries you safely through between the White Islands and Outer Heron Island, well to the southward of Hypocrite Ledge, and between Damiscove and Fisherman's Island, in not less than five fathoms water. On this course continue until the southwestern point of Fisherman's Island bears **NE.** by **N.** ½ **N.** and the middle of Squirrel Island **NW.** by **N.** ¾ **N.**, with six fathoms, soft bottom; when you will be fairly through the passage, and the southern extremity of Spruce Point will bear **N.**, with Spruce Point Ledges in range with it. Now steer **N.** for Spruce Point, carrying no less than four fathoms water, and passing nearly half a mile to the westward of Gangway Ledge, a quarter of a mile to the westward of Card's Rock, and four hundred yards to the westward of the southwestern point of Negro Island. When abreast of the southwestern end of Negro Island, in about twelve fathoms water, steer **NE.** ¾ **N.**, passing three hundred yards to the eastward of Spruce Point Ledges, two hundred and fifty yards to the eastward of Cabbage Island, nearly two hundred yards to the westward of Holbrook's Ledge, and two hundred and twenty-five yards to the eastward of Seal Rocks. This will lead you safely, with not less than five fathoms water, to convenient anchorage on the eastern side of the bay, near its head.

Holbrook's Ledge may be safely passed on either hand by giving it a berth of one hundred and seventy-five yards; but the deepest water (from six to eleven fathoms) is found to the eastward of it.

Wishing to pass to the Westward of Cabbage Island, when abreast of the southwestern end of Negro Island, as before, steer **NE.** by **N.** ¾ **N.** instead of **NE.** ¾ **N.**, and continue that course, carrying not less than five fathoms water, until you are fairly past the northern point of Cabbage Island; when an **E.** course will lead into the bay clear of Seal Rocks and in not less than six fathoms water. *But, if bound into Lewis' Cove,* steer **N.** by **W.** ½ **W.** for Mount Pisgah as soon as you are abreast of the southern point of Cabbage Island. This course leads well past the northern point of the entrance to the cove with not less than five fathoms; after which keep the eastern shore of the cove close aboard to be in good water. Seventeen feet may be carried well up into this cove by following these directions; but large flats, mostly dry at low water, make out from the western shore, to avoid which the eastern shore must be kept aboard.

DANGERS

IN APPROACHING AND ENTERING LINEKIN'S BAY.

II. ***Coming from the Southward or from Sea.***—Coming from seaward vessels may pass on either the eastern or western side of Damiscove to enter Linekin's Bay. If you pass to the eastward, no dangers are met with until you are up with Damiscove Point, when Pumpkin Island Western Ledges will be seen bearing about **E.** These consist of two small bare rocks, lying **NE.** by **E.** and **SW.** by **W.** from each other, six hundred and fifty yards apart, and are surrounded by extensive ledges, bare at low water. The southwestern rock is half a mile **NW.** ¼ **N.** from the southern end of Pumpkin Island; and from it the shoal water extends **N.** two hundred and seventy-five yards and **S.** nearly four hundred yards. The northeastern rock lies over eight hundred yards **NW.** by **N.** ½ **N.** from the northern end of Pumpkin Island; and from it the shoal water extends **N NE.** two hundred yards and **W.** by **S.** four hundred yards. Neither of these ledges is buoyed. (See page 366.)

Pumpkin Island Western Ledges.

After passing Pumpkin Island Western Ledges, the channel leads between Outer Heron Island and Damiscove, and then between the northern end of Damiscove and the southern end of Fisherman's Island, thus joining the Fisherman's Island Passage.

If, however, it is considered most convenient to pass to the westward of Damiscove, other dangers are met with, the first of which is *The Bantam*, or Bantam Rock, as it is sometimes called. (See page 366.) It lies a mile and a quarter **SW.** by **S.** ¼ **S.** from Damiscove Point, is bare at low water, extends **E NE.** and **W SW.**, and is three hundred and seventy-five yards long. Off its southwestern end, in forty feet water, is placed an iron nun-buoy of the second class, painted red, and marked No. 2. It has been recommended that this buoy be superseded by a first class nun-buoy of the same color.

Bantam Rock.

The Motions are a group of ledges, mostly bare at low water, which extend off **S SW.** from the southwestern point of Damiscove to a distance of six hundred yards. They are very dangerous to vessels passing between The Bantam and Damiscove, especially on the flood-tide, which sets very strongly upon them. They are not buoyed, but a buoy has been recommended.

The Motions.

After passing The Motions, the next danger met with by vessels using this channel lies on the western side of the entrance to Booth Bay, three hundred and fifty yards **S SE.** from Cape Island, and is formed by two bare rocky islets, about one hundred and one hundred and fifty yards in diameter, called The Cuckolds, lying three-eighths of a mile (about eight hundred yards) **S.** from Cape Newagen. On their southern sides they are dangerous to approach closely; but the eastern side of the easternmost island is quite bold-to. (See page 367.) A wooden tripod, fifty-seven feet high, (the upper half covered in with boards and painted black,) has been erected on the southern end of the eastern rock, twelve feet above high-water mark. From it

The Cuckolds.

	Miles.
Burnt Island Light-house bears N NE.	2 7/8
Damiscove Island (Wood End) E. by S.	1 3/4
Seguin Light-house, SW. by W. ½ W.	6 1/2

These rocks are much dreaded. There is a passage to the northward, between them and Cape Island, but it is unsafe for strangers.

After passing The Cuckolds the channel leads between Squirrel and Fisherman's islands into the the bay.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING LINEKIN'S BAY.

II. ***Coming from the Southward, to pass to the Eastward of Damiscove Island.***—When nearly up with Damiscove Point, bring the middle of Fisherman's Island to bear **N.** by **E.** ¼ **E.** and steer for it, passing between Outer Heron Island and Damiscove. On this course you will carry not less than fifteen fathoms water; and when the middle of Squirrel Island bears **NW.** by **N.** ¾ **N.**, with about twenty fathoms, steer that course until Spruce Point bears **N.** and the southwestern point of Fisherman's Island **NE.** by **N.** ½ **N.**, with six fathoms water, soft bottom. Then steer **N.** for Spruce Point, (carrying not less than four fathoms water,) and proceed as previously directed for entering the bay.

III. ***Coming from the Westward and passing to the Westward of Damiscove Island.***—With Seguin Light-house bearing **W.** ½ **S.**, steer **E.** ½ **N.**, carrying not less than eighteen fathoms water, until Burnt Island Light-house (on Burnt Island, in Booth Bay) bears **N.** by **E.** ¼ **E.**, with thirty-five fathoms water; when steer **NE.** by **N.** ¾ **N.**, which course will carry you clear of everything up into the channel *to the westward of Cabbage Island* with not less than five fathoms water. *But, to pass to the eastward of that island,* when abreast of the southwestern point of Negro Island give it a berth of about four hundred yards and steer **NE.** ¾ **N.**, (carrying not less than five fathoms,) and proceed as previously directed for this channel. These courses will also serve for vessels coming from the westward outside of Seguin. They pass nearly three-quarters of a mile to the westward of Bantam Rock and about five-eighths of a mile to the westward of The Motions.

BOOTH BAY AND TOWN'S END HARBOR.

Booth Bay is an arm of the sea embraced between Fisherman's Island, Linekin's Neck and Spruce Point on the east and Southport Island on the west, lies in a **N.** and **S.** direction, and is about four miles long. Linekin's Bay opens out of its eastern side, between Linekin's Neck and Spruce Point, and is separated by the latter from the cove at the head of Booth Bay, which is called Booth Bay Harbor, or more commonly Town's End Harbor, from the name of the village built on its shores.

Damiscove Island.

Coming from the eastward, outside of all the islands, Damiscove will first appear. It will look like two islands lying **N.** and **S.** from each other, close together,—the southern high and covered with grass, its surface descending steeply to the northward, but very gradually to the southward; while the northern island will appear high and well wooded. The bare bluff point at the southern end of Damiscove is called **Damiscove Point**; the wooded end on the northern side of the island is **Wood End.** (See page 358.)

Damiscove Harbor.

Passing the southern end of Damiscove, Damiscove Harbor will open. It is a long narrow cove making in on the southern side of the island, with a small settlement at its head. This harbor has good water in it, and is a great resort for inshore fishermen in southerly gales; for, although open to the southward, it is quite smooth in heavy gales from that direction.

Cape Island.

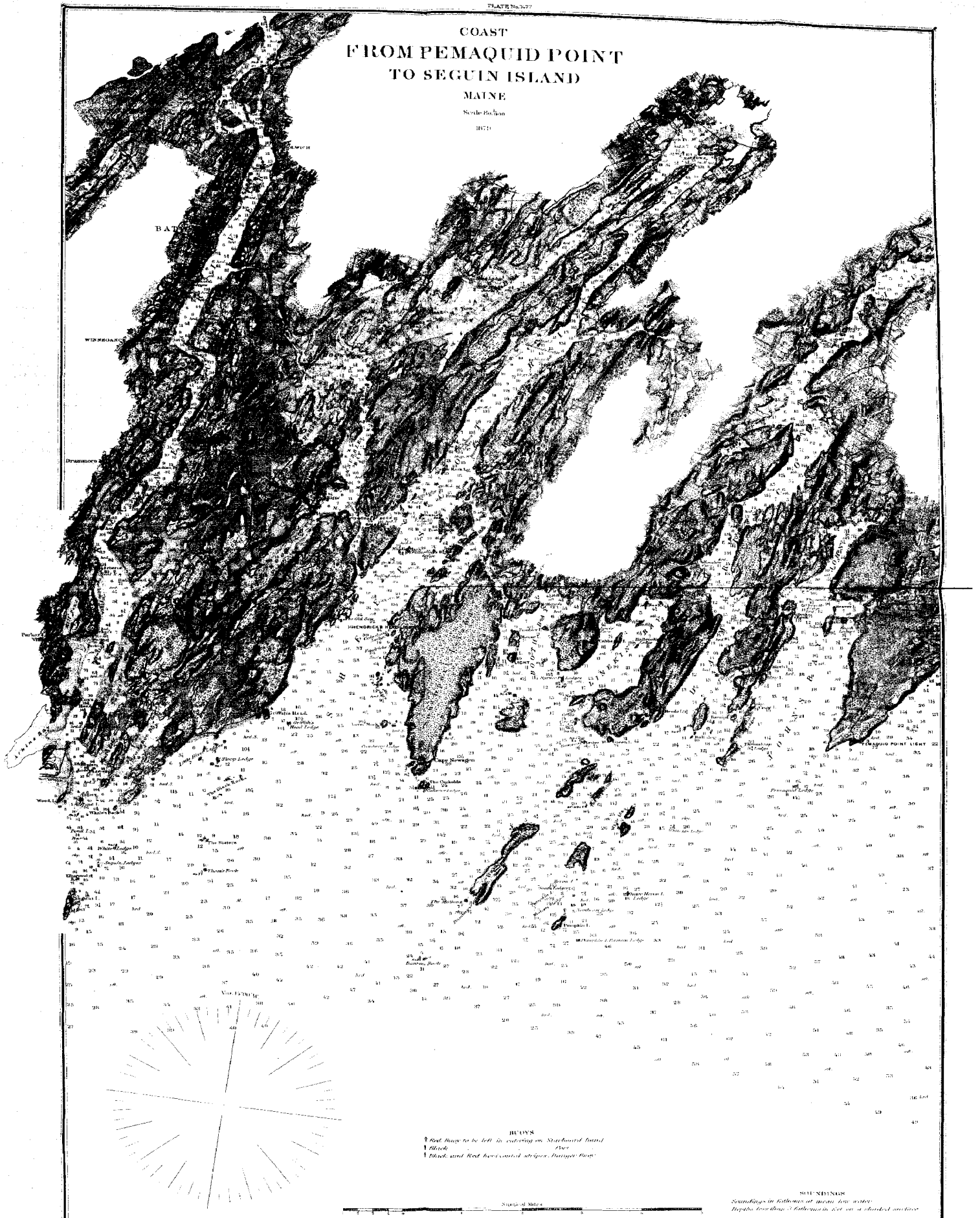
Passing Damiscove, Cape Newagen will be seen bearing **N.**, and easily recognized by the houses upon it and by its being partly hidden by a low thinly wooded islet and two bare rocks a little to the eastward of the islet. The rocks are **The Cuckolds,** (see page 367,) and the islet is Cape Island, which lies due **S.** from Cape Newagen about one hundred and seventy-five yards. Between it and the cape is a narrow passage, forming a roadstead, called **Cape Harbor,** which is, however, shoal and not well sheltered, but has good holding-ground. Two or three old frame houses will appear on the northern end of Cape Island. They are now principally used as warehouses for fish, and are not visible from the southward.

PLATE No. 3577

COAST
FROM PEMAQUID POINT
TO SEGUIN ISLAND
MAINE

Scale 80,000

1870


BATH
WINNEGANCE
Pemaquid Point
Pemaquid Point Light
Seguin Ledge
Thomas Rock
Sheep Ledge
Capt. Newagen
The Outlands
The Cuckolds
Squirrel Island
Squirrel Island Ledge
Hendricks Head
Hendricks Head Ledge
Burnt Island
Burnt Island Ledge
Pumpkin I.
Pumpkin I. Eastern Ledge
Pumpkin I. Ledge
Hunniwell Ledge
Perkins I.
Perkins I. Ledge
Outer Heron I.
Heron I.
Heron I. Ledge
Outer Heron I. Ledge
Ram I.
Ram I. Ledge
Ram I. Reef
Ram I. Reef Ledge
Fuller Rock
Fuller Rock Ledge
Fuller Rock Reef
Fuller Rock Reef Ledge
Wood I.
Wood I. Ledge
Wood I. Reef
Wood I. Reef Ledge
Pond I.
Pond I. Ledge
The Sisters
The Sisters Ledge
Outer Sisters
Outer Sisters Ledge
Outer Sisters Reef
Outer Sisters Reef Ledge
Bantam Rock
Bantam Rock Ledge
Bantam Rock Reef
Bantam Rock Reef Ledge
Mosquito I.
Mosquito I. Ledge
Mosquito I. Reef
Mosquito I. Reef Ledge
Mosquito I. Eastern Ledge
Mosquito I. Eastern Reef
Mosquito I. Eastern Reef Ledge
Mosquito I. Western Ledge
Mosquito I. Western Reef
Mosquito I. Western Reef Ledge
Mosquito I. Southern Ledge
Mosquito I. Southern Reef
Mosquito I. Southern Reef Ledge
Mosquito I. Southern Reef Ledge
Mosquito I. Southern Reef Ledge

The entrance to Booth Bay is between the southern point of Fisherman's Island and the southern point of Southport Island, called Cape Newagen, which is of moderate height and bare of trees, but covered with houses on its south-eastern face, forming the village of **Cape Harbor.** Viewed from the southward, this cape will be seen over a low sparsely wooded islet, called Cape Island, and the two bare rocks known as The Cuckolds, mentioned above. Behind the houses on the cape the land will appear as a high bare ledge,—thickly wooded hills forming the background. **Cape Newagen.**

Southport Island separates Booth Bay from the Sheepscot River, lies **N.** and **S.**, and is four miles long and of irregular shape. Two miles to the northward of Cape Newagen it attains its greatest width of a mile and three-quarters, and thence diminishes to the southward,—being only three-eighths of a mile wide at the cape. Southport is thickly wooded and very thinly settled on its eastern shore, which presents, alternately, bare and wooded surfaces, high bare ledges, and low gently sloping lands, dotted here and there with houses. The middle of the island is thickly wooded and uninhabited; and it is separated from the peninsula of Booth Bay, to the northward of it, by a narrow, crooked but deep passage, called **Town's End Gut,** leading from the Sheepscot into Booth Bay between precipitous bluffs, and which at this point is not a hundred yards wide. **Southport Island.**

A vessel coming into the bay from the southward will pass between Damiscove and The Cuckolds, and, heading up for Burnt Island Light-house, leave Squirrel Island to the eastward, passing between it and Southport.

Squirrel Island is situated in the middle of the bay, midway between Southport and Linekin's Neck. It is nearly three-quarters of a mile long and about eight hundred yards wide; its southern end about eighty feet high and tolerably steep, covered with a growth of stunted spruce nearly to the water's edge; while the northern half is quite low, nearly bare of trees, and under cultivation. A number of houses are built on this part of the island. Just to the northward of the southwestern point a cove makes in on the western side, called **Squirrel Island Cove,** which has from three to seven fathoms water in it and is entirely unobstructed. **Squirrel Island.**

When abreast of Squirrel Island, a low wooded island will appear ahead and close to the shore of Southport. This is Pig Island, or **Pig Cove Island,** as it is sometimes called, and is very irregular in shape, lies **N.** and **S.**, and is half a mile long, low and well wooded. A cove, semicircular in shape and dry at low water, makes in on its eastern side, nearly dividing the island. Pig Cove Island is separated from Southport by a long and narrow passage, called **Pig Cove,** into which four and a half fathoms at low water may be carried for a quarter of a mile from its southern entrance; but above this a bar extends from Southport to Pig Island with only two feet at mean low water, and at low spring tides this bar is bare. **Pig Island.**

To the eastward of Squirrel Island, and close in with the eastern side of Linekin's Neck, will appear **Negro Island,** (see page 369.) The entrance to Linekin's Bay lies between this island and **Spruce Point,** to the northwestward.

Abreast of Pig Island, about four hundred yards to the eastward, is Burnt Island, a round bare islet, about forty feet high and nearly three hundred yards in diameter. It is three-quarters of a mile **N NW.** from Squirrel Island and the same distance **W.** from the southern end of Spruce Point; and its shores are very bold-to. There is a good channel on both sides of it, but the main channel is to the eastward and has eleven fathoms water. **Burnt Island.**

On the eastern side of Burnt Island, near its southern end, is built Burnt Island Light-house, which is the guide to this bay and harbor. It is a white tower, twenty-four feet high, and shows a fixed white light, of the fourth order of Fresnel, from a height of sixty-one feet above the sea, visible thirteen miles on a clear night. Adjoining the tower, to the westward, and connected with it by a covered way, is the light-keeper's dwelling, which is painted white; and this together with a small house near the northern end of the island are the only buildings. The geographical position of the light-house is **Burnt Island Light-house.**

Latitude ..... **43° 49′ 29″ N.**
Longitude ..... **69° 38′ 25″ W.**

Next to the northward of Burnt Island is a small low island, the southern face of which is cleared; but the northern and western sides are wooded and about forty feet high. This is Mouse Island, or **Johnson's Island,** as it is sometimes called, from the name of the owner. On the southern face is a handsome cottage, standing in the middle of ornamental grounds; and on the northern end is a warehouse and small dwelling-house adjoining a strong pier which is used by the inland steamers as a landing-place. These are all the buildings on the island. Mouse Island is four hundred yards to the northward of Burnt Island and about the same distance from the shore of Southport. There is excellent water on both sides of it, and capital anchorage under its northern shores, between it and McKown's Point. **Mouse Island.**

Two hundred and seventy-five yards off the western shore of Spruce Point, and eight hundred yards **E.** by **N.** ½ **N.** from the northern end of Mouse Island, is a small bare island, surrounded by shoals, called Tumbler Island. There is a narrow passage between it and Spruce Point, but it is shoal and unsafe for strangers. **Tumbler Island.**

To the northward and eastward of the entrance to Town's End Gut is a high bluff head, called McKown's Point, which is bare of trees, under cultivation, and eighty feet high. It forms the western side of the entrance to **Booth Bay** or **Town's End Harbor,**—the eastern shores being formed by the northwestern side of Spruce Point. The entrance is here a little over eight hundred yards wide, but after passing McKown's Point it widens to a mile in width. **McKown's Point.**

On the eastern side of Town's End Harbor a cove makes in to the northeastward with good water; and on its shores is built the village of **Town's End.** This is the **Eastern Harbor,** and is the principal anchorage. All of the harbor to the westward

of this cove is called **Western Harbor**, and is wider and more commodious than the Eastern Harbor, but not so well sheltered. The shores are bold-to, and good holding-ground may be found anywhere between the eastern and western sides in from three to five fathoms at low water.

The village of Town's End is situated in the northeastern part of Town's End Harbor,—being built on both sides of the cove called Eastern Harbor. The western shore of this cove is a high bluff, eighty feet above high-water mark, and occupied by several handsome dwellings. The point to the westward of the bluff, which is low and fringed with trees, is called Mill Point, and forms the eastern side of a large irregularly shaped cove, called Mill Creek.

Mill Point.

Mill Creek is shoal, as only nine feet can be taken into it past Mill Point. Its western point is a low and flat piece of land, called Railway Point, upon which is a steam railway and apparatus for taking vessels up and repairing them. This is the best railway east of Portland, being much more easy of access than those at Bath; and, being under the management of skillful and experienced workmen, many vessels are yearly repaired here.

Railway Point.

West of Railway Point is another low point fringed with trees, and forming the eastern point of the entrance to Campbell's Creek, which has over three fathoms at low water in its mouth; but just above the entrance it is crossed by a bridge over which passes the "shore-road" from Southport to Town's End. All of these shores are thickly settled,—being included in the township of **Booth Bay**.

Campbell's Creek.

Behind McKown's Point, to the northward, the western harbor forms a large and deep cove,—much contracted and obstructed, however, by a line of bare ledges making off from the eastern side of the entrance to Campbell's Creek to a distance of three hundred yards. The best water is close along the shore of McKown's Point.

DANGERS

IN APPROACHING AND ENTERING BOOTH BAY AND TOWN'S END HARBOR.

I. ***Coming from the Eastward by the Fisherman's Island Passage.***—The dangers in the approach to Booth Bay from the eastward, through the Fisherman's Island Passage, have already been described under the head of dangers in approaching Damariscotta River. They are, first, *Hypocrite Ledge*, lying between the White Islands and Fisherman's Island, and for the most part bare at low water. Its southern end is marked by an iron spindle, with cage on top,—all being painted black. Secondly, Fisherman's Island Point,—a ledge, bare at low water, making off from the southwestern end of Fisherman's Island. From it extends to the southward a shoal with fourteen feet at mean low water and twelve at low springs. The southern point of this ledge is three hundred and fifty yards to the southward of the island, and is not buoyed.

Fisherman's Island Point.

Gangway Ledge, the next obstruction met with, lies in the middle of the passage which leads E. and W. between Linekin's Neck and Fisherman's Island, and is marked by a red spar-buoy (No. 12). Seven feet at mean low water and five at low spring tides are found on this rock; and three hundred and fifty yards W. by N. from it is *a shoal with fifteen feet at mean low water.*

Gangway Ledge.

Card's Rock lies a quarter of a mile NW. from Gangway Ledge buoy, and has eleven feet on the ledge lying to the southward of it, which is marked by a red spar-buoy (No. 10) placed in good water.

Spruce Point Ledges lie six hundred yards S. from Spruce Point and are bare at low water. With the shoal water surrounding them they cover a space about four hundred yards N. and S., extending to within two hundred yards of Spruce Point; and six fathoms at low water may be taken between them and the point through a channel about one hundred yards wide. They are marked by a red spar-buoy (No. 8) placed in five fathoms off their southern end.

Spruce Point Ledges.

Tumbler Island Ledge. Tumbler Island Ledge lies five hundred yards (about a quarter of a mile) W. NW. from the southern end of Spruce Point, and has good water on all sides of it. Ten feet will be found on this rock at low spring tides; and it is marked by a red spar-buoy (No. 6) placed in five fathoms off the western edge of the shoal.

After passing Tumbler Island Ledge the channel is clear and the shores bold-to until you come abreast of Tumbler Island, which should receive a berth of one hundred and fifty yards to the eastward; and, after passing it, if bound into Eastern Harbor, the eastern shore should receive a berth of two hundred and fifty yards. The small bare islet which lies S. from the bare bluff point on the western side of Eastern Harbor should be left one hundred and fifty yards to the northward and westward in passing into the harbor.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BOOTH BAY AND TOWN'S END HARBOR.

I. ***Coming from the Eastward, through the Fisherman's Island Passage.***—The course through this passage is W. by N. ¼ N., which leads well to the southward of the Hypocrite and Fisherman's Island Point, in not less than five fathoms water. On this course continue until the southwestern

point of Fisherman's Island bears **NE.** by **N.** ½ **N.** and the middle of Squirrel Island **NW.** by **N.** ¾ **N.**, with six fathoms water, soft bottom. You are now fairly through the passage, with the southern extremity of Spruce Point bearing **N.**, and Burnt Island Light-house (over the northern end of Squirrel Island) **N.** by **W.** ⅔ **W.** Now steer **N.** by **W.**, exactly for the middle of McKown's Point, carrying not less than four fathoms, and passing an eighth of a mile to the eastward of the northeastern point of Squirrel Island, nearly half a mile to the westward of Spruce Point Ledges, and four hundred yards to the westward of Tumbler Island Ledge. Continue this course past Johnson's or Mouse Island until you are a quarter of a mile from McKown's Point and just past Tumbler Island, with seven and a half fathoms water, when a **NE.** ¾ **E.** course leads, with not less than five fathoms, into Eastern Harbor and up abreast of the town. Or, a **N NE.** course will lead into Western Harbor, close along the eastern shore of McKown's Point. Round the point on its northern side, carrying not less than four and a half fathoms, (giving the point a berth of one hundred and twenty-five yards to the southward,) and anchor in the cove under the northern shore, between Railway Point and McKown's Point.

Sailing Directions---Booth Bay.

II. ***To pass between Linekin's Neck and Fisherman's Island and enter Booth Bay.***—A course **W.** by **N.** ¼ **N.** for the northern side of the wooded hill on the southern end of Squirrel Island leads safely through this passage with not less than four fathoms, passing an eighth of a mile to the southward of the buoy on Gangway Ledge and six hundred yards to the southward of the buoy on Card's Rock. On this course, when Spruce Point bears **N.** and Burnt Island Light-house **NW.** by **N.**, (seen just clear of the northern point of Squirrel Island,) and you are in four fathoms, steer **N.** by **W.** ¾ **W.** for the western slope of the bluff on McKown's Point, carrying not less than eight fathoms water; and when within a quarter of a mile of the point, and just past Tumbler Island, steer **NE.** ¾ **E.** into Eastern Harbor, with not less than five fathoms; or **N NE.** past McKown's Point, and thence into Western Harbor, carrying not less than four and a half fathoms.

DANGERS

IN APPROACHING AND ENTERING BOOTH BAY AND TOWN'S END HARBOR.

II. ***Coming from the Eastward, between Damiscove Point and Bantam Rock.***—The first danger met with in coming from the eastward through this passage is *Pumpkin Island Eastern Ledge*, which has sixteen feet at mean low water and is not buoyed, but shows itself in heavy weather. It is eight hundred and fifty yards **SE.** by **E.** from Pumpkin Island, and a mile and a half **S.** from Outer Heron Island.

Pumpkin Island Western Ledges are next met with, also on the northern side of the channel. They are two bare rocks lying **NE.** and **SW.** from each other; but the southwestern rock only is dangerous to this passage. It lies half a mile **NW.** ⅛ **N.** from the southern point of Pumpkin Island, and the shoal water extends to the southward of it nearly four hundred yards. This ledge is not buoyed, and to avoid it vessels must give the bare rock a berth of at least a quarter of a mile to the northward.

Pumpkin Island Western Ledges.

The Motions are a group of ledges, mostly bare at low water, which extend in a **S SW.** direction from the southwestern point of Damiscove nearly six hundred yards. They are very dangerous to vessels using this passage, especially on the flood-tide, which sets very strongly upon them. They are not buoyed, but a buoy has been recommended.

The Motions.

The Bantam, or Bantam Rock, a very dangerous shoal, lies on the southern side of this passage, and is quite as dangerous to vessels on the ebb-tide as The Motions are on the flood. It is bare at extreme low tides, and is marked by an iron nun-buoy of the second class, painted red, and marked No. 2. It is placed in good water about one hundred yards **SW.** from the rock, which latter lies one mile and a quarter **SW.** by **S.** ¼ **S.** from Damiscove Point.

Bantam Rock.

The Cuckolds are the two rocky islets which lie on the western side of the entrance to Booth Bay, about three-eighths of a mile **S.** from Cape Newagen. They are dangerous of approach from the southward on account of the long reefs making off from their southern sides; but the eastern side of the eastern rock is quite bold-to. The flood current sets right on to these rocks. A wooden tripod, fifty-seven feet high, (the upper half covered in and painted black,) has been erected on the southern end of the eastern rock twelve feet above high-water mark. From it

The Cuckolds.

	Miles.
Burnt Island Light-house bears N NE.	2 ⅞
Damiscove Island, (Wood End,) E. by S.	1 ¾
Seguin Light-house, SW. by W. ½ W.	6 ½

There is a passage, with ten feet at low water, between The Cuckolds, but it is not safe, nor is it of any importance.

Pig Cove Ledge extends in a S. direction from the southern end of Pig Island for three hundred and fifty yards, and at this distance there is a small rock, bare at half tide. This rock serves as a beacon to mark the end of the ledge. Eastern Ledge, or *Pig Island Eastern Ledge*, is a very dangerous one, four hundred yards long, which makes off in a southerly direction from the northern point of the cove on the eastern side of Pig Island. Its southern end is one hundred and fifty yards from the eastern shore of Pig Island, and is not buoyed; and part of the ledge is dry at low water. To avoid it, vessels using this passage must hug the Burnt Island shore.

Eastern Ledge.

Squirrel Island Ledge lies on the eastern side of this channel, and extends W. NW. from the northern point of Squirrel Island to a distance of nearly six hundred yards. Ten feet at mean low water and eight at low springs may be found on this ledge, and it is marked by a red spar-buoy (No. 4) placed in five fathoms off its northwestern edge.

Squirrel Island Ledge.

The southwestern point of Mouse Island has *a long ledge making off to the southward*, which is dry at low water; but the western shore of the island is quite bold-to and may be safely approached.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BOOTH BAY AND TOWN'S END HARBOR.

III. ***Coming from the Eastward, between Damiscove Point and Bantam Rock.***—Vessels which have come through the Muscle Ridge Channel, intending to use this passage, alter the SW. by W. course as soon as they are fairly between Allen's Island and Monhegan, and steer W. by S. $\frac{3}{4}$ S. until Pemaquid Light-house bears N. by W. $\frac{1}{8}$ W., when W. $\frac{1}{2}$ N. will lead safely through, between The Motions and The Bantam, in not less than ten fathoms water. But from outside of Monhegan, (about two miles to the southward of it,) a straight course W. by N. $\frac{3}{4}$ N. will also lead safely through. On the ebb-tide this course must be altered to the northward to avoid The Bantam, as when made good it leads within six hundred and fifty yards of the rock. This course carries you through in not less than ten fathoms. On either of these courses continue until you open Burnt Island Light-house to the westward of the southwestern point of Squirrel Island on a bearing of N. $\frac{1}{2}$ E. Then steer N. $\frac{1}{8}$ E. for the southern end of Pig Island, carrying not less than eighteen fathoms water, and passing a quarter of a mile to the westward of The Motions and nearly three-quarters of a mile to the eastward of The Cuckolds. When abreast of the southern end of Squirrel Island, in about eighteen fathoms, steer N. by E., *if bound up to the westward of Burnt Island*, keeping the eastern side of the channel aboard to avoid Pig Island Eastern Ledge, and carrying not less than ten fathoms; and when Burnt Island Light-house bears E. by N., or is a little forward of the beam, steer N. $\frac{1}{2}$ W. past Mouse Island, with not less than seven fathoms water. When about midway between the entrance to Town's End Gut and the dock on the northern side of Mouse Island, and in seven fathoms water, a NE. by E. $\frac{1}{8}$ E. course will lead safely into Eastern Harbor, where you may anchor off the town. Or, keep the southern and eastern shores of McKown's Point close aboard, and round that point into Western Harbor.

Wishing to anchor in Pig Cove.—When between The Motions and The Bantam, and Burnt Island Light-house bears N. $\frac{1}{2}$ E., (just open to the westward of Squirrel Island,) steer N., which course will carry you straight into the cove with not less than ten fathoms water. Pig Cove Ledge always shows itself, and is, therefore, easily avoided.

But, wishing to pass to the eastward of Burnt Island, when abreast of the southern end of Squirrel Island steer N NE. for the western point of Tumbler Island, and continue this course, with not less than four fathoms water, until abreast of Burnt Island Light-house, when steer for the eastern end of McKown's Point, carrying not less than eight fathoms; *and, if bound into Western Harbor*, pass close to the point and round its northeastern end into the harbor, with not less than twenty-seven feet. *But, if bound into Eastern Harbor*, when abreast of Tumbler Island steer NE. $\frac{3}{4}$ E., which will lead you clear of everything up to the anchorage, and with not less than five fathoms.

Or, anchor anywhere between Johnson's or Mouse Island and McKown's Point, in from six to eight fathoms, soft bottom. This is a great anchorage for fishermen.

IV. ***Coming from the Southward, or from Seaward, to enter Booth Bay.***—Bring Burnt Island Light-house to bear N. by E. and steer for it. This course carries not less than twelve fathoms past Squirrel Island, passes nearly three-quarters of a mile to the westward of The Bantam, about five-

eighths of a mile to the westward of The Motions, and nearly half a mile to the eastward of The Cuckolds. Continue it, carrying not less than four fathoms, until within three hundred yards of Burnt Island; when you will be in about five fathoms water, and, *if bound to the eastward of that island,* must round its southeastern end, keeping in about ten fathoms two or three hundred yards from shore—if it be night-time,—and when abreast of the light, with it bearing **W.**, steer for the eastern end of McKown's Point, and follow the directions given above. On the last course there is not less than seven fathoms water. *Sailing Directions—Booth Bay.*

But, if bound to the westward of Burnt Island, when within eight or nine hundred yards of the light, in about thirteen fathoms, steer **N. ½ W.**, keeping the western sides of Burnt and Mouse islands close aboard to avoid Eastern Ledge, and carrying not less than six fathoms. When past Mouse Island, and midway between it and the entrance to Town's End Gut, in six and a half fathoms, steer **NE.** by **E. ½ E.** into Eastern Harbor, carrying not less than five fathoms water; or follow the shore of McKown's Point into Western Harbor; or anchor under the northern shore of Mouse Island.

DANGERS

IN APPROACHING AND ENTERING BOOTH BAY AND TOWN'S END HARBOR.

III. ***Coming from the Westward, outside of Seguin.***—Vessels of heavy draught, coming from the westward and intending to pass to the southward of Seguin Island, must beware of Mile Ledge, with eighteen feet at mean low water and sixteen at low spring tides, lying nearly three-quarters of a mile **S. ½ W.** from the southern point of Seguin Island and nearly a mile from Seguin Light-house. In the day-time it is perfectly safe to go inside of this rock; and from sixteen to eighteen fathoms may be carried about midway between it and the island. The ledge is marked by a second-class iron can-buoy, painted red and black in horizontal stripes, and placed in seven fathoms just to the southward of the ledge. *Mile Ledge.*

Tom's Rock, sometimes called *The Sunken Sister,* lies in Sheepscot Bay, two miles and a half **NE.** by **E. ¼ E.** from the southern point of Seguin and **NE.** by **E. ⅜ E.** from Seguin Light-house. From Cape Newagen it bears **SW. ½ W.**, distant a little over four miles. It has eight or nine feet at mean low water, and is marked by a red spar-buoy (No. 2) placed in deep water well to the southward and westward of the ledge. You must pass to the southward of it going into Sheepscot and Booth bays, but to the northward if you use the inside channel. This buoy sometimes goes adrift, and vessels must be guided by the bearings to avoid the ledge. *Tom's Rock.*

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BOOTH BAY AND TOWN'S END HARBOR.

V. ***Coming from the Westward, outside of Seguin Island.***—Bring Seguin Light-house to bear **N.**, one mile and an eighth distant, with nine and a half fathoms water, and steer **NE.** by **E. ¼ E.** for the southern end of Fisherman's Island. This course carries not less than nineteen fathoms water and passes three-quarters of a mile to the southward of Tom's Rock. Continue it until past the mouth of the Sheepscot and Burnt Island Light-house bears **N.** by **E.**, with twenty-seven fathoms water, when steer for the light, and follow the directions previously given.

There is another channel, by which the Sheepscot River and Booth Bay may be approached from the westward. It passes to the northward of Seguin and along the northwestern shores of Sheepscot Bay, but is, however, too dangerous for strangers to attempt, being full of ledges, shoals and rocks, (only a few of which are buoyed,) and being, moreover, subject to the influence of the dangerous tidal currents in the vicinity of the Kennebec Entrance. It will be treated of under the head of the Sheepscot River.

LIGHT-HOUSE.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Burnt Island Light-house	43 49 29	69 38 25	4 38 33.7	Fixed.	61	13

TIDES.

Corrected Establishment	$10^h\ 25^m$
Mean Rise and Fall of tides	8.9 ft.
Mean duration of Rise	$6^h\ 12^m$
Mean duration of Fall	$6^h\ 13^m$

CURRENTS.

Little need be said in regard to the currents in Booth Bay and the approaches to it, except to repeat the caution to mariners coming from the eastward through the passage between Damiscove Point and The Bantam, viz: *On the flood-tide* to beware of The Motions, on which the current of flood sets strongly, and *on the ebb* to take like care to avoid The Bantam, on which the ebb sets with considerable force. The current of flood also sets strongly on The Cuckolds; and, therefore, strangers at night, if it be flood-tide, should never haul up to enter the harbor until Burnt Island Light-house bears **N.** by **E.**

The flood-current sets on to Mile Ledge and Tom's Rock, but its strength is not great, and the courses laid down give them a sufficient berth, except in heavy southerly weather, when the distance from the rocks can easily be estimated by the bearings given on page 377.

ICE IN BOOTH BAY.

The outer harbor never freezes over, and always affords good shelter, even in the severest winters; but the inner or Town's End Harbor is often entirely closed, although the obstruction does not continue long. The formations are entirely local.

Northerly winds have a tendency to remove the ice, and are somewhat assisted by the current of ebb. Ice forms most rapidly on flood tide and with an easterly wind.

SHEEPSCOT RIVER.

This river empties into **Sheepscot Bay**, and is the first opening into the land met with to the westward of Booth Bay. It is very deep,—nine fathoms being the shoalest water in the channel from the month of the river to the town of Wiscasset, nearly fourteen miles above. Its entrance is contained between Cape Newagen on the east, and the southeastern point of Georgetown Island, called Griffith's Head, on the west; and between these two points it is two miles and five-eighths wide, with an almost unobstructed channel.

Southport Island.

Southport Island (the southern extremity of which is Cape Newagen) lies between Sheepscot Bay and Booth Bay. It is four miles long and of variable width, its greatest extent **E.** and **W.** being a mile and a half, and its narrowest part, at **Cape Newagen**, only three-eighths of a mile. It lies **N.** and **S.**, and its western side forms the eastern shores of the lower part of the Sheepscot. This side of the island presents a shore of varied heights from the lowland at Cape Newagen, where it is forty feet high, to the high bluff at Christmas Cove, (a mile and a half above the cape,) where it is over one hundred feet. The land is generally thickly wooded and the shore-line very irregular; and several islands lie along the shore.

Cape Island.

Cape Island lies off the southern end of Cape Newagen, and is separated from it by a narrow strait, know as **Cape Harbor.** The island is low and rocky, with a few fir trees upon it and one or two houses; and, viewed from the southward, the houses in the cape settlement are distinctly to be seen over it. It is surrounded by shoal water and dangerous rocks.

Hunting Island.

Hunting Island also lies off the southern end of Southport Island, about two hundred and fifty yards to the westward of Cape Island, and forms the southern side of the entrance to Cape Harbor. It is low and thinly wooded, and its western and southwestern shores should receive a good berth, as there are long ledges and bad shoals extending from the island to the westward and southwestward.

Lower Mark Island.

To the northwestward of Hunting Island, a little more than three-quarters of a mile distant, lies a small wooded island, called Lower Mark Island. It is three-eighths of a mile from the Southport shore, about two hundred yards in diameter, and is wooded with spruce and fir,—mainly the latter. In the centre of the islet rises a spruce tree from which all of the branches have been stripped except at the very top, where a tuft has been left, giving to the tree, as it rises above all of the others, the appearance of a tall pole with a black ball on top of it. Inside of this island the ground is broken and dangerous, and strangers should always pass to the westward of it.

Christmas Cove.

One mile and a half above Cape Newagen a long narrow cove makes in to the northward for about half a mile. It is called Christmas Cove, and is easily recognized by the high, thinly wooded hill on the western side of the entrance to it. This hill is the highest land on the western shore of Southport. The middle of the island rises to a much greater height, and shows bare ridges and here and there thin woods of pine and hemlock. Christmas Cove is shoal, and much of it is dry at low water, and it offers no advantages as a harbor.

Hendrick's Harbor.

Seven-eighths of a mile to the northward of Christmas Cove is Hendrick's Harbor, the entrance to which is between a low bare island, called **David's Island**, (with one or two houses on it,) on the north, and a larger partly wooded island, called **Joe's Island**, on the south. It is contained between the western shores of Southport on the east and David's and Joe's islands on the west; and at its northern end it terminates in a shallow cove running up into the island of Southport. The southern end is formed by a narrow passage between Joe's Island and the western shore of Southport, and is dry at low water. The entrance is extremely narrow and has nine feet in it; but the harbor is completely land-locked, and vessels may lie securely at all times. The anchorage is, however, very narrow, and vessels usually moor by a line to one of the wharves.

There is quite a settlement at Hendrick's Harbor, and a number of fishermen fit out there; but strangers cannot enter without a good local pilot.

Just to the northward of Hendrick's Harbor is Hendrick's Head, easily recognized by the light-house on it. It is a little over two miles and a half above Cape Newagen and a mile and a quarter above Christmas Cove, and is low, bare and rocky. On its southern extremity is built Hendrick's Head Light-house, the guide for entering the Sheepscot River,—a square brick tower, thirty feet high, whitewashed, and connected with the keeper's dwelling (a one-and-a-half story house) by a covered way,—both the latter being white. This light-house shows a revolving white light (flashing once every thirty seconds) of the fourth order, from a height of forty feet above the level of the river, visible twelve nautical miles. Its geographical position is

Hendrick's Head and Light-house.

Latitude	**43° 49′ 20″ N.**
Longitude	**69° 41′ 24″ W.**

Hendrick's Head is very bold-to, and vessels may go close to it. There is a cove to the eastward of it which is full of rocks and nearly dry at low water.

One mile to the northward of Hendrick's Head is a low but prominent point, called Dogfish Head, easily recognizable by a large porgy-oil factory built upon it. The land between it and Hendrick's Head is all low and thickly wooded with pine and spruce. Dogfish Head forms the southern point of the entrance to Ebenicook Harbor, and is quite bold-to.

Dogfish Head.

The western shores of the Sheepscot, from its mouth to a distance of four miles to the northward, are formed by the eastern side of Georgetown Island, seven and a half miles long and of a very irregular shape. It lies between the Sheepscot and the Kennebec, and is tolerably well settled. On its southern side it is indented by two shallow coves, called **Sagadahoc Bay** and **Heal Eddy**; and on the northern side it is nearly separated into two parts by a long narrow cove, called **Robin Hood's Cove**, which, beginning at the northern end of the island, runs to within less than a mile of the southern end.

Georgetown Island.

Griffith's Head, the southeastern point of Georgetown Island, is a bare round hillock about fifty feet high, and composed, to a great extent, of limestone. The summit is of marble, and being worn by the weather presents a very bald and white appearance,—the more remarkable as the land in the vicinity is quite low and sandy. To the eastward, separated from it by a very narrow channel, dry at low water, lies the **Outer Head**, a detached rock, about one hundred and fifty yards in diameter and perfectly bare, and about two hundred yards from shore.

Griffith's Head.

One mile and three-eighths to the northward of Griffith's Head is the entrance to a long narrow cove, with from four to seven fathoms water, called Herman's Harbor. It is three-quarters of a mile long, but its entrance is very much contracted by a small islet and reef of rocks making out from its eastern side. The entrance, although narrow, has, however, four fathoms at low water, and there is capital anchorage within the harbor, whose shores are occupied by quite a settlement.

Herman's Harbor.

Between Herman's Harbor and Griffith's Head the shores are bold-to, and are rocky and wooded.

Five-eighths of a mile to the northward of Herman's Harbor is the southernmost of a group of islets called the Five Islands, which are all small and five in number. The southernmost is about two hundred yards from the Georgetown shore, and has a few spruce trees on it; the two central islands are about one hundred and seventy-five yards to the northward of the southernmost, and are larger and more thickly wooded. The two northernmost lie close together, about four hundred yards to the northward of the middle islands, are both low and very small, and lie closer to the shore than any of the others.

Five Islands.

There are various passages among the Five Islands, but only one that is available, except for very light-draught vessels. This passage leads between the northernmost island and the central islands,—the channel leading close along the northern shore of the latter with eight fathoms water. Having passed in by this entrance, a small but comfortable harbor is reached, contained between the islands and the Georgetown shore, where you may anchor securely in from three to five fathoms at low water. This harbor is called Five Islands Harbor, and the entrance to it is a very little above but nearly opposite to Hendrick's Head Light-house, on the eastern shore of the river.

Five Islands Harbor.

Just above the Five Islands opens the Little Sheepscot River, a narrow passage, running in a northerly direction between the northeastern end of Georgetown Island and a moderately high, well wooded island, called McMahan's Island. The Little Sheepscot is only about two hundred and fifty yards wide at its mouth, and rapidly narrows to only about seventy-five yards; but it spreads out into a cove just above **The Narrows** and attains a width of nearly a quarter of a mile. At its northern extremity it joins the **Sasanoa River**, which connects the Kennebec and Sheepscot; and its whole length from its mouth to Soldier Point, where it joins the Sasanoa, is nearly a mile. Five fathoms may be carried through it at low water, but the velocity of the current is great and the channel narrow, though straight, and it is by no means suitable for strangers.

Little Sheepscot River.

Soldier Point is the northeastern point of Georgetown Island, and forms the western side of the entrance of the Little Sheepscot into the Sasanoa. It is low, very thinly wooded, and occupied by one house and a small barn.

Soldier Point.

McMahan's Island lies on the western side of the Sheepscot, along the northeastern shore of Georgetown, and forms the eastern shore of the Little Sheepscot. It extends **N.** by **E.** and **S.** by **W.**, is nearly a mile in length and triangular in shape,—its widest part being at its northern end. This island is moderately high (about eighty feet in its highest part) and is well wooded; and its northeastern end is a low bare point, backed by spruce and pine woods, called **Northeast Point.** This point forms the southern side of the entrance to the Sasanoa, which here makes in to the westward through a narrow and deep passage called **Goose Rock Passage.**

McMahan's Island.

A little over half a mile to the eastward of the middle of McMahan's Island lies a small, bare, round island, called **Middle Mark Island.** It is surrounded by shoals, but there is a channel with nine fathoms water between it and McMahan's Island by keeping the shore of the latter close aboard.

A quarter of a mile **N.** by **E.** from Northeast Point is a small, low, wooded island, called Whittum Island. It lies **NE.** by **N.** and **SW.** by **S.**, in the middle of the entrance to Goose Rock Passage, and is about two hundred and fifty yards long and quite narrow. There is good water into the Sasanoa on both sides of it, but the true channel is between the southern end of this island and Northeast Point.

Whittum Island.

The northern shore of Goose Rock Passage is formed by the southern end of **Westport Island,** a large island, which forms the western side of the Sheepscot River from the mouth of the Sasanoa to the town of Wiscasset.

On the eastern shore of the Sheepscot a group of islands extends to the northward from Dogfish Head, lying along the northwestern face of Southport and the western shore of Booth Bay Peninsula; and the first to the northward of the head is a group of three, called the Green Islands. They are about one hundred yards to the northward of Dogfish Head, and form the northern side of the entrance to a wide and deep cove or basin, called Ebenicook Harbor. The middle island of the group is the largest, and is thinly wooded on its western side, but elsewhere bare of trees; and rises gradually to a height of eighty feet above high-water mark. The other two islands are low, wooded and much smaller than the central one, and there is no passage between them except at high water.

Green Islands.

Ebenicook Harbor, as before mentioned, is a wide cove or basin, embraced between the **N.** and **NW.** points of Southport Island; and the principal entrance to it from the westward and southwestward is between the Green Islands on the north and Dogfish Head on the south;—through which passage twelve fathoms may be carried. It may also be entered by a passage between the Green Islands and the island north of them, called Boston Island; but the former is the usual and best channel. From the eastward and southeastward the harbor may be entered through Town's End Gut; but here a draw-bridge has to be passed, and the channel is narrower, more crooked and has a very strong tideway. On the west and northwest this harbor is protected by the line of islands which lie along the western shore of Southport and Booth Bay Peninsula. Thus it is completely land-locked, and being easy of access, with plenty of water and good holding-ground, it forms the most desirable harbor on the Sheepscot River. A small settlement occupies the southern and eastern shores, and the western side is occupied by mills, warehouses and the dwellings of those employed in the mills. There are few obstructions in this harbor, and it is entirely free from ice in the winter.

Ebenicook Harbor.

Boston Island, between five and six hundred yards to the northward of the Green Islands, is bare of trees except near its crest, where there is a small grove of pine. Its western shores are steep, but on its southern side the land rises very gradually to the summit, sixty feet high. It lies **NE.** by **N.** and **SW.** by **S.**, and is six hundred and fifty yards long; and between it and the Green Islands there is a passage with three and a half fathoms into Ebenicook Harbor, narrowed, however, and obstructed by *a large ledge, dry at half ebb,* which surrounds a little bare islet about midway between Boston Island and the Green Islands. Boston Island lies exactly opposite to Northeast Point.

Boston Island.

To the northward of Boston Island lies a group composed of three islands, the central one being much the largest. This middle island is called Sweet's Island, and sometimes **Thirty-Acre Island.** Its southern point is only three hundred yards to the northward of Boston Island, and is low and partly wooded. The island rises gradually to a height of eighty feet above high-water mark, the middle and southern portions tolerably well wooded with the usual growth of pine and spruce, and the northern and western shores low, cleared and cultivated. On the northern shore there are several houses. Sweet's Island is nearly twelve hundred yards long, (a little over half a mile,) and its greatest width is three-eighths of a mile, or over seven hundred yards. The small low islet with a few trees on it, which lies two hundred and fifty yards **SW.** from the centre of Sweet's, is called **Powderhorn Island.** It is about two hundred yards long and is surrounded by shoals.

Sweet's Island.

The third island of the group above mentioned is in reality two islands, joined only at low water; and the common name applied to them is **The Spectacles,** or Spectacle Island. They lie about two hundred and seventy-five yards **SE.** from the southeastern face of Sweet's Island, and are of an oval shape and of equal length,—being each about two hundred and seventy-five yards long. They are both low and entirely bare; and between them and the southeastern face of Sweet's Island there is a channel with six fathoms leading to the northward.

Spectacle Island.

Between three and four hundred yards to the eastward of The Spectacles, and between them and the western shore of Booth Bay Peninsula, lies an island called Indiantown Island. It lies in a **N.** and **S.** direction, and is five-eighths of a mile long, but quite narrow; and its northern and southern ends are formed by wooded hillocks eighty feet high, separated by a valley running **E.** and **W.** about the middle of the island. Thus, viewed from the westward, the island presents a saddle-like appearance; and in the centre of the valley two or three houses may be seen. The channel to Town's End Gut from the northward passes between this island and The Spectacles, and then between the southwestern point of Booth Bay Peninsula on the north and the northern point of Southport on the south.

Indiantown Island.

The entrance to Town's End Gut is about three hundred and seventy-five yards wide, but rapidly diminishes in width until, at the bridge, which is only about eight hundred yards from the entrance, it is only one hundred and fifty yards wide. Beyond the bridge it spreads out into a broad basin, from the northwestern side of which a long, narrow and shallow cove makes in to the northwestward, called **Hodgdon's Cove.** To the southward of Hodgdon's Cove the Gut again narrows to a width of one hundred and thirty yards, running between partly wooded and partly cleared lands on the east and a wooded, bluff point, one hundred feet high, on the west. Passing this bluff it sends off an arm to the westward, called **Thompson's Cove,** with shores cleared and settled; and then, once more contracting to a width of one hundred yards, enters Booth Bay. Town's End Gut is a mile and a quarter long, and the least water in it is three and a half fathoms at low water; but a strong tidal current runs through the passage, and strangers must not attempt it. **Town's End Gut.**

Ram Island, a little over three hundred yards **NW.** from Sweet's Island, is a low grassy islet, lying **N.** by **E.** and **S.** by **W.**, and two hundred and twenty-eight yards long. Two hundred yards to the eastward of it is another small island, not named; and between this and Sawyer's Island, to the eastward, is a channel with sixteen feet at mean low water leading from the northward into Town's End Gut. **Ram Island.**

Sawyer's Island is of very irregular shape, about eleven or twelve hundred yards long, and has an average width of about five-eighths of a mile. Its northern and southern shores are much indented by coves, (three on the southern and two on the northern side,) but most of them are dry at low water. The island is of moderate height, mainly cleared and settled; and the passage between its southeastern point and the northern end of Indiantown Island is only fifty yards wide at high water, and the two islands are connected at low water. **Sawyer's Island.**

A bridge or causeway, fifty yards long, connects the southeastern point of Sawyer's Island with the mainland; and another bridge, about forty yards long, joins its northeastern end to another island, called Hodgdon's Island, which lies **N.** and **S.**, and is half a mile long. Its southern half is low and wooded with a variety of trees; but the northern half is higher, cleared and settled. The island lies in the middle of the mouth of a narrow passage between the peninsula of Booth Bay and a large, high, well-wooded island, called Barter's Island. **Hodgdon's Island.**

Opposite to Ram Island, on the western shore of the Sheepscot, is a wide but shallow cove, called Jewett's Cove. It is on the eastern shore of Westport Island, three-quarters of a mile above Northeast Point and five miles above the mouth of the river; and its shores are high, cleared and under cultivation, with a number of dwellings, wharves and fish-houses on its banks. It affords good anchorage for vessels drawing not over ten feet, but is somewhat exposed to the swell in southerly winds. **Jewett's Cove.**

Just to the northward of Jewett's Cove is a long, narrow and shoal cove running to the northward, called **Long Cove.** It enters between the northeastern point of entrance to Jewett's Cove on the west and a low bare point, called **Kehail's Point,** on the east, and is nearly dry at low water. This cove is exactly opposite to Sawyer's Island.

Four hundred yards to the eastward of Kehail's Point lies Upper Mark Island, the most northerly of the three Mark Islands in the river. It is a small bare island, of moderate height, lies nearly **N.** and **S.**, and is about one hundred and fifty yards long. It is bold-to on its southern and eastern faces; but a long ledge extends to the northward from its northern end, and on the western side the approaches are quite shoal. There is, however, a passage with nearly four fathoms between it and Kehail's Point. **Upper Mark Island.**

After passing Kehail's Point and Upper Mark Island, the river runs between Westport Island on the west and a large partly cleared island, called Barter's Island, on the east. This island lies off the western shore of the peninsula of Booth Bay, from which it is separated by the narrow but deep channel called **Back River.** On the south it is separated by a narrow passage from Sawyer's and Hodgdon's islands, and on the north by Cross River from the mainland. It is three miles and a quarter long, and at its widest part, near the southern end, is nearly a mile wide. On the river side it presents a gradually sloping surface, descending from its crest to the water, partly cleared and cultivated, and with scattered houses near the shore. **Barter's Island.**

On the western side of the river the shores are high, bluff and bold-to from Kehail's Point to The Narrows, seven miles above. The first indentation after passing Kehail's Point is Tarbox's Cove, a small, narrow and shallow cove on the eastern side of Kehail's Point, which is only used by the "longshore fishermen" belonging to the river, and is otherwise of no importance. **Tarbox's Cove.**

From Tarbox's Cove the shores of Westport extend in a **NNE.** direction, nearly two miles, to a large cove of irregular shape which is often used as an anchorage by wind-bound vessels. Between its northern and southern points of entrance it is nearly a mile wide, but sends up a long arm to the northward called **Fowle's Cove,** and another smaller arm to the southward called **McCarty's Cove;** while the middle and main part of the curve is known as **Greenleaf's Cove.** A small bare rock, called **Greenleaf's Ledge,** lies off the entrance near the northern point. The shores are steep and high, and wooded with spruce and fir.

Fowle's Point, the northern point of entrance to the cove above mentioned, is immediately opposite to the northern point of Barter's Island, and is high, bluff and precipitous. It is wooded except on its crest, which is cleared, cultivated and settled; and here the river, which has had an average width of half a mile from Tarbox Cove up to this point, suddenly narrows to a width of less than a quarter of a mile, running between high steep banks to The Narrows. **Fowle's Point.**

Directly opposite to Fowle's Point is the mouth of Cross River, which takes its rise on the peninsula of Booth Bay, runs **N.** for two miles, then turns and runs directly **W.** for half a mile between high and precipitous banks, and in a deep and very narrow channel, with from three to five fathoms, through which the tide pours with great velocity. This channel is called **The Oven's Mouth**; and from it the river has a general course about **W SW.** for a little over a mile to its mouth. It connects with Back River by a wide passage, through which nine feet may be taken, between the western end of The Oven's Mouth and the eastern shores of Barter's Island. Cross River at its mouth is not quite a quarter of a mile wide, but six fathoms at low water can be carried through a perfectly clear channel to The Oven's Mouth, and sixteen feet over the bar at the eastern end of the latter.

Cross River.

Quarry Point. On the northern side of the entrance to Cross River is the mainland, the southern point of which, forming the northern point of Cross River entrance, is called Quarry Point. It is low and gently sloping, mostly cleared and cultivated, but with a few trees on its southern extremity. The channel of the Sheepscot leads directly between it and Fowle's Point with twelve fathoms water.

Both shores of the river from Quarry Point to The Narrows are bold-to and precipitous, but the eastern shore is specially noticeable from its being formed by a series of thickly wooded bluffs, separated from each other by cleared and cultivated valleys, dotted with houses here and there.

Doggett's Castle. On the western shore, just above Fowle's Point, is a small cove called **Rum Cove**, which is of no importance. On its northern side is a high, bold and precipitous ridge of rock, called Doggett's Castle, but corrupted by the settlers into the **Dog's Castle**. The shores are here so bold-to that eight fathoms are found a few yards from the rock.

Nearly a mile above the Castle is **Colby's Cove**, a small cove with precipitous banks, which affords good anchorage; and opposite to its mouth is the spindle on **Merrill's Ledge**.

One mile above Colby's Cove is **Hilton's Point**, a narrow, rocky point, of moderate height and bare of trees. Three-quarters of a mile above it is Clough's Point, the northern point of Westport Island and the southern point of The Narrows. It has a bare gently sloping surface on its northern face, but its eastern side is precipitous, and the western shores thinly wooded with spruce. **NE.** from it, at a distance of four hundred yards, is the southern end of Davis' Island. The river here turns abruptly at right angles to its former course, forming **The Narrows**, through which you pass to the westward, between Davis' Island and Clough's Point, into Wiscasset Bay.

Clough's Point.

Davis' Island, which forms the eastern shore of Wiscasset Bay, lies **ENE.** and **W SW.**, and is about three-quarters of a mile long. It is thinly wooded, (except a portion of its southern shores, which are cleared,) and is of moderate height except on its southeastern face, where is a conical hill rising abruptly from the low land around it. At the base of this hill a bridge connects the island with the mainland; and the cove formed by this bridge and the southeastern shore of Davis' Island with the eastern shore of the Sheepscot is called **The Eddy**.

Davis' Island.

The prominent feature of the entrance to Wiscasset Bay is the old block-house on Davis' Island, which is an ancient building, octagonal in form and loop-holed for musketry, standing near the southern point of the island. The town of Wiscasset is connected with Davis' Island by a bridge with a draw, which forms the northern side of the harbor.

Wiscasset Bay. Wiscasset Bay or **Wiscasset Harbor** is of irregular shape, but wide and deep, forming a most excellent harbor, with good anchorage, and very little obstructed. The town of **Wiscasset** is built upon its western shores, has about two thousand inhabitants, and its natural advantages as a commercial port can scarcely be surpassed; but it is completely overshadowed by the neighboring town of Bath, situated on the Kennebec, which commands all the immense lumber trade of the country drained by that river.

On the western shore of the bay of Wiscasset lie two shallow coves, the northernmost of which, about half a mile below the town, is called **Pottle's Cove**. The other, called **Hilton's Cove**, makes in to the southward behind a grassy and prominent point, called **Birch Point**, which forms, with Clough's Point, the entrance to a deep river, separating Westport Island from the mainland to the westward, and called Back River. It connects the Sheepscot with the Sasanoa at Hockomock Bay, but is of little use to strangers on account of the narrow limits to which the channel is confined and the shoals and ledges which obstruct it. Its general course is about **SW.** by **S.**, and its length from Clough's Point to **Westport Bridge**, where it joins the Sasanoa, is exactly six miles. Three miles to the southward of Clough's Point the river widens to a breadth of over a mile, forming a shallow bay, called **Montsag Bay**, which extends from **Young's Point** (three miles below Clough's) to Westport Bridge. The channel is here very narrow and crooked.

Back River.

A draw admits vessels from Montsag Bay into Hockomock Bay through Westport Bridge.

DANGERS

IN APPROACHING AND ENTERING SHEEPSCOT RIVER.

I. ***Coming from the Eastward and proceeding up to Wiscasset.***—Vessels coming from the eastward, bound into the Sheepscot, may go on either side of *The Bantam*, or Bantam Rock, as it is sometimes called. This dangerous rock lies one mile and a quarter **SW.** by **S.** ¼ **S.** from Damiscove Point, is bare at extreme low tides, and is marked by an iron nun-buoy (No. 2) of the second class, painted red, and placed in good water about one hundred yards **SW.** from the rock.

Bantam Rock.



Entrance to Sheepscot River from the S'd, Hendricks Head L't. Ho. bearing N. by E. ½ E. distant 3/4 Miles.



Approaches to the Sheepscot River from the Eastward, Damiscove Island bearing N. distant 1 Mile.

If you pass to the northward of The Bantam there will be seen, bearing about **N.** by **E.**, a heavy breaker on a group of rocks just to the southward of Damiscove Island. These are The Motions, and are dangerous on the flood-tide, which sets right on to them. They are mostly bare at low water, extend in a **S SW.** direction nearly six hundred yards from the southwestern point of Damiscove, and are not buoyed; but a buoy has been recommended. ***The Motions.***

Passing to the westward of The Bantam, Tom's Rock will be to the westward going in, but so far distant that it cannot be said to obstruct the passage to vessels coming from the eastward. It bears **W.** by **N.** ¼ **N.** from The Bantam, distant exactly four miles, and is the southernmost of a group of rocks called The Sisters,—being sometimes called *The Sunken Sister* to distinguish it from the others, which are bare. It bears **SW.** ½ **W.** from Cape Newagen, distant nearly four miles, and has nine feet at mean low water. It is marked by a red spar-buoy (No. 2) placed in deep water well to the southward and westward of the ledge, and which is to be left to the westward if you are bound into the Sheepscot. This buoy sometimes goes adrift, and vessels must be guided by the bearings to avoid the ledge. ***Tom's Rock.***

Passing to the northward of Tom's Rock, the next obstruction is called The Sisters. They are on the western side of the entrance, a little over half a mile **N.** from Tom's Rock buoy, and two of them are always bare. The southernmost one is bare at half-tide, and shoal water extends two hundred yards every way from the bare rocks; and a wide channel exists between them and the western shores of Sheepscot Bay. ***The Sisters.***

Passing The Sisters, the next danger is Black Rocks, also on the western side of the main channel. They are three rocky islets, (surrounded by shoal water,) which lie **N.** by **E.** ¼ **E.** from The Sisters, about a mile distant, (bearing taken from easternmost Sister to easternmost Black Rock.) The easternmost of this group bears **S.** ½ **W.** from Griffith's Head, distant one mile and an eighth. ***Black Rocks.***

The next obstruction is only dangerous in thick weather, or if you come from the eastward between Damiscove and The Bantam. It is on the eastern side of the channel, and is known and dreaded as The Cuckolds,—two bare rocky islets (see page 372) lying about three-eighths of a mile **S.** from Cape Newagen. They are dangerous of approach on their southern side on account of the reefs in that direction; and the shoals also extend half a mile to the westward of the western rock. The current of flood sets right on to these rocks. A wooden tripod, fifty-seven feet high, has been erected on the southern end of the eastern rock twelve feet above high-water mark. The upper half is covered in with boards and painted black; and from it ***The Cuckolds.***

	Miles.
Burnt Island Light-house bears NNE.	2⅞
Damiscove Island (Wood End) E. by S.	1¾
Seguin Light-house SW. by W. ½ W.	6½

When past The Cuckolds, the next obstruction will be seen to the westward. It is called Griffith's Head Ledge, and has seven feet at mean low water and scarcely five at low spring tides; and being bold-to and surrounded by very deep water, it almost always breaks. This ledge bears **E.** ¼ **S.** from the Outer Head, distant about eight hundred yards; **NE.** by **N.** from the Black Rocks, distant a mile and a quarter; and is marked by a spar-buoy painted red and black in horizontal stripes, placed about sixty yards to the southward of the shoal. ***Griffith's Head Ledge.***

There is a good channel between the Outer Head and Griffith's Head Ledge.

When past the head, Lower Mark Island will be seen bearing about **E.** It is very bold-to on its western face and may be approached closely with eight fathoms; but about half a mile to the northward of it, and on the eastern side of the channel, lie a group of very dangerous ledges, called the Cat Ledges, some of which are always bare, but many bare only at low water. They lie to the westward of the entrance to Christmas Cove and on the western side of the southern entrance to Hendrick's Harbor, and are quite bold-to on their western side. The group covers a space half a mile in length, and extends in a **NW.** and **SE.** direction. Four fathoms may be taken between their northern end and the southern point of Joe's Island; and thence between them and the western shore of Southport a deep passage exists; but none dare use it but the fishermen who live in that vicinity and are familiar with all the dangers, as it is narrow and crooked. In southerly winds, even if very moderate, the sea breaks upon the Cat Ledges in a very frightful manner; and the roar of the breakers can be distinctly heard at Jewett's Cove, several miles to the northward. ***Cat Ledges.***

Off the southern end of Joe's Island *are ledges bare at low water*, which ought properly to be included in the group forming the Cat Ledges. It is best for vessels in beating not to go inside of the range of Hendrick's Head Light-house and the large bare rock forming the northernmost of the Cat Ledges.

When abreast of the Cat Ledges, the entrance to Herman's Harbor will bear about **W.** by **N.** The eastern point of the entrance is very shoal, and the shore should here receive a berth of two hundred and fifty yards.

The next dangers met with in going up the river are exactly opposite to each other, on either side of the channel. The one on the eastern shore is called Cedar-Bush Ledge; that on the western side is The Old Sow. Cedar-Bush Ledge lies W. by S. from the southern point of **Cedar-Bush Island**, (which is a small low island, lying to the southeastward of Hendrick's Head,) distant two hundred yards. It has ten feet at mean low water, is a quarter of a mile S. from Hendrick's Head Light-house, and on the southern side of the northern entrance to the harbor.

Cedar-Bush Ledge.

The Old Sow is out at low spring tides and has two feet at mean low water. It is about two hundred and fifty yards S SW. from the outermost of the Five Islands, and is only dangerous to vessels which, in beating in, may stand too close to the shores of the islands.

A long ledge, bare at low water, extends to the southward from the northernmost of the Five Islands, two hundred and fifty yards,—obstructing the entrance to Five Islands Harbor.

Passing Hendrick's Head you must be careful, when about half a mile to the northward of the light, not to go too near the shore of Southport if you draw over fourteen feet, for there is *a ledge with sixteen feet at mean low water* about two hundred yards from shore.

Bull's Ledge, or *Bull's Rock,* as it is mostly called, is the next danger met with. It lies nearly in mid-river, is bare at low water, and is marked by a spar-buoy painted red and black in horizontal stripes, placed on the southern point of the ledge. From this ledge Hendrick's Head Light-house bears S. by E. ½ E., seven-eighths of a mile; Dogfish Head E. ¾ S., five-eighths of a mile; and Middle Mark Island N NE., five-eighths of a mile.

Bull's Ledge.

Passing Bull's Ledge, there will be seen ahead a small, bare, round island, lying nearly in the middle of the river, but a little closer to the western than the eastern shore. This is **Middle Mark Island**, (see page 380,) which is surrounded by shoals, and should receive a berth to the northward of three hundred and fifty yards, to the southward of two hundred and fifty yards, and to the westward of one hundred and fifty yards; but you may pass to the westward of it, and go between it and McMahan's Island. In that case look out for Mark Island Ledge, which has only seven feet at mean low water, lies two hundred and fifty yards SW. from Middle Mark Island, extends N. and S., and is over three hundred yards long. Five fathoms may be taken between the island and the ledge and ten fathoms between the ledge and McMahan's Island; but in using this latter passage you must keep close to McMahan's Island to avoid the ledge, which is not buoyed.

Mark Island Ledge.

When past Middle Mark Island, there will be seen a breaker bearing about E. This is on Harding's Ledge, a very dangerous rock, obstructing both the Sheepscot channel and the entrance to Town's End Gut. It lies half a mile S. by W. from Powderhorn Island and nearly half a mile E. ½ N. from Middle Mark Island, and is four hundred yards to the westward of Boston Island. It lies nearly N. and S., and has eight feet at mean low water, and is not buoyed; but a buoy has been recommended.

Harding's Ledge.

A narrow passage, with six fathoms, separates the northern end of Harding's Ledge from *Powderhorn South Ledges,* which extend off to the southward from the southern point of Powderhorn Island a little more than a quarter of a mile, and in many places are bare at low water. They have ten feet at their southern extremity, and six feet is found on them four hundred yards from the point of the island; and they are not buoyed.

After passing between Harding's Ledge and Middle Mark Island, the next obstruction met with is a very dangerous ledge on the western hand, known to the inhabitants of the neighboring shores as Eight Feet Ledge. It lies E. from northeastern point of McMahan's Island, exactly between it and Powderhorn, and ten feet at mean low water and eight feet at low spring tides are found on it; and it is dangerous even to those acquainted with the river. It lies in a line drawn from Middle Mark Island to the spindle on Clou's Ledge,—seven hundred yards to the northward of the island and about four hundred to the southward of the spindle. This ledge is not buoyed, but a buoy has been recommended.

Eight Feet Ledge.

Vessels passing up the river between Clou's Ledge and the western shore can avoid this ledge in the day-time by not going so far to the eastward as to bring Clou's Ledge spindle to bear N. ¾ E. Those passing up the main channel should keep Kehail's Point open to the eastward of the spindle on Clou's Ledge. The range of the spindle with Kehail's Point leads exactly over the ledge.

After passing Eight Feet Ledge, the black spindle on Clou's Ledge will be seen bearing about NW. The ledge is bare at three-quarters ebb, lies between Whittum Island and Powderhorn Island, almost exactly in mid-river, and may be passed on either hand,—the main channel, however, leading to the eastward of it. This ledge, the Eight Feet Spot to the southward, and the Four Feet Spot to the northward of it, seem to form part of a long rocky spur making off from Middle Mark Island towards Upper Mark Island; for there are found, when passing up river, at short distances along the whole line, (one and a half miles long,) ledges or spots with shoal water, forming pinnacles or knobs on the back of this spur.

Clou's Ledge.

Powderhorn Ledge, or *Powderhorn North Ledge,* as it should properly be called, is the next obstruction met with. It lies on the eastern shore of the river, one hundred yards N. from Powderhorn Island, has four feet at mean low water, and is marked

Powderhorn Ledge.

by a red spar-buoy (No. 2) placed off the northwestern edge of the shoal. A channel with five fathoms at low water exists between this ledge and Powderhorn Island; and it can safely be entered by keeping the **N.** point of the island close aboard.

Four Feet Spot, on the western hand of vessels bound up the main channel, has no distinctive name,—being known simply as the Four Feet Spot. Its bearings and distances are as follows: Clou's Ledge spindle bears **S.** ¼ **W.**, a quarter of a mile, and the northern end of Powder Island **SE.** ⅜ **E.**, three-eighths of a mile distant. The ledge is distant from the shore of Jewett's Cove about half a mile, and is marked by a spar-buoy painted red and black in horizontal stripes, and placed in five fathoms on the southern side of the ledge. This is a very dangerous ledge, formed by one of the knobs on the back of the ridge from Middle to Upper Mark Island. ***Four Feet Spot.***

Vessels using the western channel, which leads along the eastern shore of McMahan's Island, and between Whittum Island and Clou's Ledge, will meet, after passing the latter and the Four Feet Spot, a bad ledge of rocks off the **S.** point of the entrance to Jewett's Cove, called Long Ledge. It is about two hundred yards from the shore, is bare in places at low spring tides, extends **N.** by **E.** and **S.** by **W.** for a quarter of a mile, and there are several detached rocks which lie to the northward and eastward of it, between it and Upper Mark Island, and one with sixteen feet midway between it and Whittum Island. The rocks between Long Ledge and Upper Mark Island have seventeen and eighteen feet at low water, and are not specially dangerous. ***Long Ledge.***

The whole of the ground between Whittum Island and Westport is very much broken,—being full of ledges and sunken rocks, which, owing to the strong current of Goose Rock Passage, makes this a dangerous vicinity. So strong is the current of the Sasanoa, especially on ebb-tide, that it is dangerous for strangers to use the western channel of the Sheepscot; and it is always better, if it be possible, to keep to the eastward of Clou's Ledge.

Long Ledge is not buoyed, but it is plainly marked at low water by the kelp. Vessels beating in or out should not stand farther to the westward in this vicinity than the range of Clou's Ledge spindle with Kehail's Point, which will be on the bearing of the spindle **S.** ¼ **W.**, and the point **N.** ¼ **E.**

Vessels using the main channel, after passing the Four Feet Spot, meet with no obstruction until they are past Ram Island, (page 381.) The island itself may be passed close-to with five fathoms water, as its western shore is quite bold-to; but about three hundred and fifty yards to the northward lie two ledges, bare at low water, called Ram Island Ledges, surrounded by shoal water and broken ground; and it is not safe for vessels of heavy draught to go to the eastward of the range of the western end of Barter's Island bearing **N.** by **E.** ¼ **E.** There is, however, a channel leading into Back River, which passes between the southern point of Barter's and the northwestern end of Sawyer's Island. The entrance leads close under Barter's Island until past the shoals to the northward of Ram Island Ledges; after which both sides are bold-to. ***Ram Island Ledges.***

The shoal ground extends to the northward of Upper Mark Island more than a quarter of a mile; and only an eighth of a mile to the northward of this lies a large bare ledge, known as Hodgdon's Ledge, or *Tarbox's Ledge*, as it is sometimes called. It lies seven hundred yards **N.** by **E.** from Upper Mark Island, and is two hundred yards from shore and **E.** of the entrance to Tarbox Cove. This ledge is marked by a black spar-buoy (No. 3) placed off the southern point of the ledge in five fathoms at low spring tides, and it is to be left to the westward. ***Hodgdon's Ledge.***

After passing Hodgdon's Ledge there is nothing in mid-river; but there is a bare ledge, called Stover's Ledge, about two hundred yards to the westward of the Barter's Island shore, a little above Hodgdon's Ledge. This is only dangerous to vessels beating in or out, and these must be careful to give this part of the island a good berth. Stover's Ledge is marked by a red spar-buoy (No. 4) placed in five fathoms water off the southern end of the shoal. ***Stover's Ledge.***

Greenleaf's Ledges, the next obstructions met with, are two and three-eighth miles above Hodgdon's Ledge; and between the latter and these ledges the river is entirely unobstructed. The principal ledge is a bare rocky islet, surrounded by shoal water, lying two and a half miles to the northward of Hodgdon's Ledge, a quarter of a mile **SW.** from Fowle's Point, and a little over a quarter of a mile from the shore of Greenleaf's Cove. Inside of this ledge lies another at a distance of a hundred and twenty-five yards, with four feet at mean low water and awash at low spring tides. A black spar-buoy, marked No. 5, is placed in five fathoms on the southeastern point of Greenleaf's Ledges. ***Greenleaf's Ledges.***

Vessels beating up or down river should not approach the shore of Westport Island, between McCarty's Point and Fowle's Point, nearer than on a line drawn between the former and the dry part of Greenleaf's Ledges.

From Greenleaf's Ledges the river is clear of all obstructions until you are up with Merrill's Ledge, two miles and a half above Fowle's Point. This ledge lies on the eastern side of the river, about two hundred yards from shore, and just to the northward of the mouth of **Merrill's Cove**, which makes in on the eastern shore of the river abreast of ***Merrill's Ledge***

Dangers--Sheepscot River. Colby's Cove, and affords fair anchorage. The ledge is bare at low water, lies **NE.** and **SW.**, is six hundred yards long between the lines of three fathoms, and is marked by a spindle painted red and placed on the highest part of the ledge, near its southern end.

Abreast of Merrill's Ledge, on the western shore of the river, is **Colby's Cove,** (page 382,) an excellent anchorage for wind-bound vessels.

After passing Merrill's Ledge the channel is entirely unobstructed as far up as Hilton's Point, from which *a ledge, with only eight feet at mean low water,* extends **NE.** for four hundred yards. It is not buoyed, but is easily avoided by keeping in mid-river or over towards the eastern shore; or, if beating to windward, by not going inside of Hilton's Point bearing **SW.** until you are a third of a mile to the northward of it.

Clough's Point should receive a berth of one hundred yards to the westward and southward in passing or rounding it, bound up.

After passing The Narrows, the first danger met with is to the southward, and consists of two ledges or rocks, called Seal Rocks, lying in Wiscasset Bay, between Clough's and Birch points, and in the middle of the channel leading into Back River. The more northerly of the two is bare, and is five hundred yards **W NW.** from Clough's Point and exactly the same distance from Birch Point. The inner and more southerly rock is two hundred and fifty yards **SE.** from the outer one, and only one hundred and fifty yards from the shore. Three fathoms at low water is found between the two rocks; and the outer one is marked by a black spar-buoy (No. 7) placed in good water off the northeastern point of the ledge. Seal Rocks are only dangerous on account of the set of the current of ebb, which has a tendency to carry vessels towards Back River, and consequently upon these ledges. Vessels passing through The Narrows should, if possible, keep the Davis' Island shore aboard.

Seal Rocks.

After passing The Narrows and leaving Seal Rocks buoy to the southward, steer up for the southernmost wharves in Wiscasset to avoid a shoal with ten feet at mean low water, which lies nearly in the middle of the bay, about a quarter of a mile from the shore of Davis' Island. This shoal begins at Wiscasset Bridge, extends **SW.** for three-eighths of a mile, and is called The Middle Ground. There is no buoy on it.

The Middle Ground.

In avoiding The Middle Ground be careful not to get too close to the large piers on which the saw-mills are built, as there is a dangerous sunken ledge, called *Birch Point Ledge,* about one hundred and fifty yards to the southward and westward of them. This rock has only seven feet at mean low water and five at low spring tides, lies three hundred and fifty yards **NE.** ¼ **N.** from Birch Point and about a quarter of a mile to the westward of the southern end of The Middle Ground, and has caused several disasters.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING SHEEPSCOT RIVER.

I. ***Coming from the Eastward and proceeding up to Wiscasset.***—If coming inside The Bantam, between it and Damiscove, bring Griffith's Head to bear **NW.** and steer for it, carrying not less than twelve fathoms, until Hendrick's Head Light-house bears **N.** by **E.** ½ **E.**, with thirty-two fathoms, soft bottom; when steer **N.** by **E.** ¼ **E.**, which course continue, with not less than twelve fathoms, until up with the buoy on Hodgdon's Ledge. Leave this to the westward and keep the middle of the river, with not less than eleven fathoms, until up with the mouth of Cross River, when it may be necessary to keep one shore or the other aboard to avoid the current of that river, according as the tide is flood or ebb. Both shores are very bold-to. After passing Quarry Point, however, the way is clear and the depth not less than eleven fathoms until up with the spindle on Merrill's Ledge, which you must leave to the eastward and keep the western shore aboard until well past the ledge; when keep the middle until up with The Narrows, carrying not less than nine fathoms up to Clough's Point. In passing The Narrows with an ebb-tide and a strong breeze keep the shore of Davis' Island aboard to avoid Seal Rocks; but if the tide be flood, keep the middle of the passage. Ten fathoms may be carried through into Wiscasset Bay. As soon as you are through The Narrows, steer for the large saw-mill at the southern end of **The Boom** until within three hundred yards of it and in about eight fathoms water, when The Middle Ground is safely past, and you may haul up for the draw in **Wiscasset Bridge** and anchor off the town at discretion, in from four to six fathoms, soft bottom. But, if of light draught, you may cross The Middle Ground, as there is nowhere less than ten feet upon it at mean low water.

If intending to pass to the Southward of The Bantam, bring Pond Island Light-house to bear **NW.** by **W.** and steer for it, carrying not less than thirty fathoms, until Hendrick's Head Light-house bears **N.** by **E.** ⅛ **E.**, and you are in about thirty fathoms. Then steer **N.** by **E.** ¼ **E.**, carrying not less than twelve fathoms, and proceed as directed above.

These courses made good will pass eight hundred yards to the westward of Cat Ledges; a quarter of a mile to the westward of Cedar-Bush Ledge; a quarter of a mile to the eastward of Bull's Ledge; two hundred yards to the eastward of Middle Mark Island; a quarter of a mile to the westward of Harding's Ledge; six hundred yards to the westward of Powderhorn South Ledges; an eighth of a mile to the westward of Powderhorn North Ledge; two hundred yards to the eastward of Eight Feet Ledge; a quarter of a mile to the eastward of Clou's Ledge; four hundred yards to the eastward of Four Feet Spot; two hundred yards to the eastward of Upper Mark Island; and one hundred and fifty yards to the eastward of Hodgdon's Ledge. *Sailing Directions---Sheepscot River.*

DANGERS

IN APPROACHING AND ENTERING SHEEPSCOT RIVER.

II. ***Coming from the Westward, outside of Seguin.***—In this case strangers must make Seguin Island (off the entrance to the Kennebec) and pass outside of it. The first danger encountered in this passage is Mile Ledge, situated nearly one mile **S. ½ W.** from Seguin Light-house and three-quarters of a mile from the southern point of the island. It may be avoided by going close under the southern point of Seguin, or by keeping a mile and a half to the southward of the island. It is marked by an iron can-buoy of the second class, painted red and black in horizontal stripes, and placed in seven fathoms water about one hundred yards to the southward of the ledge. Eighteen feet at mean low water will be found on this ledge, and in heavy southerly or easterly weather it breaks with great violence. ***Mile Ledge.***

Passing to the eastward of Seguin, the next danger is Tom's Rock, which leave to the westward. Tom's Rock, already described, (page 383,) is the southernmost of a group of rocks called The Sisters, and is itself sometimes known as *The Sunken Sister*. It has nine feet at mean low water, and is marked by a red spar-buoy (No. 2) placed in deep water on the southwestern side of the rock. This buoy is intended as a guide to the passage inside of Seguin, and is therefore painted red, as it must be left to the eastward by vessels using that passage, or bound into the Kennebec; but those bound into the Sheepscot, and passing to the southward of Seguin, must leave it well to the northward and westward. This rock bears **NE. by E. ¾ E.** from Seguin Light-house, from which it is distant two miles and three-eighths. From Griffith's Head it bears **S. ¾ W.**, distant three miles, and from Cape Newagen **SW. ½ W.**, distant nearly four miles. ***Tom's Rock.***

To the northward of Tom's Rock lie The Sisters, also on the western side of the entrance, and a little over half a mile to the northward of Tom's Rock buoy. Two of them are bare rocky islets, while the southernmost is only bare at half-tide; and shoal water extends two hundred yards in every direction from the bare rocks. The Sisters are not buoyed, as they always show themselves. They lie between the main entrance and the Inner or Black Rock Channel. ***The Sisters.***

Next to the northward of The Sisters, at a distance of seven-eighths of a mile, will be seen a group of three bare rocky islets, also on the western side of the channel. These are the Black Rocks, and from The Sisters they bear **N. by E. ¼ E.**, (bearing taken from easternmost Sister to easternmost Black Rock.) The rocks are not in any way connected, deep channels existing between and among them; but each rock is surrounded to some distance by shoal water and broken ground. From the easternmost of the Black Rocks, Griffith's Head bears **N. ½ E.**, distant one mile and an eighth. ***Black Rocks.***

The position of the Black Rocks and The Sisters can be determined by the mariner at night or in thick weather almost as well as in clear weather or daylight, as the roar of the breakers upon each group on approaching it serves to indicate its position with considerable accuracy. To pass them safely under such circumstances it is, however, necessary to get hold of Seguin and take your departure from it.

After passing the Black Rocks no dangers are met with until you enter the river,—the obstructions in which have already been described, (pages 383–386.)

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING SHEEPSCOT RIVER.

II. ***Coming from the Westward, outside of Seguin Island.***—From a position one mile and a quarter **S.** from Cape Small Point, and in sixteen fathoms, the course to clear Mile Ledge is **E. ¼ S.** This will lead half a mile to the southward of the ledge, if the course is made good, and will carry not less than thirteen fathoms. On this course, when Seguin Light-house bears **N. ¼ W.**, with Pond Island Light-house shut in behind the eastern spur of the island, steer **NE.** for Cape Newagen. This

course leaves Tom's Rock half a mile to the northward and westward and carries not less than twenty fathoms. If the tide be flood, steer **NE.** by **E.** to allow for the set of the current, which during flood-tide sets on to Tom's Rock. When, on the course for Cape Newagen, Hendrick's Head Light-house bears **N.** by **E.** $\frac{1}{2}$ **E.**, with thirty-two fathoms, soft bottom, steer **N.** by **E.** $\frac{1}{4}$ **E.**, which will lead up the middle of the channel with not less than twelve fathoms; and when up with Hodgdon's Ledge follow the directions previously given, (page 386.)

DANGERS

IN APPROACHING AND ENTERING SHEEPSCOT RIVER.

III. ***Coming from the Westward, inside of Seguin Island.***—This passage is not safe for strangers on account both of the numerous ledges and sunken rocks which obstruct it and the force of the tidal current of the Kennebec, which sets directly across the course of a vessel passing through the channel. But as circumstances may compel strangers to seek an entrance by this passage, the dangers will be carefully described and the means of avoiding them.

The most of the ledges and rocks which obstruct this passage are common to it and the Kennebec entrance, as vessels must pass the mouth of the latter to enter the Sheepscot River. The first obstruction met with is Jack-Knife Ledge, a very dangerous ledge, (which has been the cause of many disasters,) lying on the northern side of the channel, with eight feet at mean low water and about six feet at low spring tides. It bears **NW.** by **N.** from Seguin Light-house, one mile and a quarter distant; from Pond Island Light-house **SW.** by **S.**, nearly one mile and a quarter, and from Cape Small Point **E.** by **N.** $\frac{1}{4}$ **N.**, two miles and three-quarters distant; and it is three-quarters of a mile from the nearest shore, which is that of the Fox Islands. It is marked by an iron nun-buoy of the second class, painted black, with the letters "J. K." in white upon it. In winter this is replaced by a black spar-buoy, lettered in the same way. This buoy is placed in three fathoms to the southward of the ledge; but it frequently goes adrift, owing to the heavy sea and insecure holding-ground, and vessels must carefully watch the bearings to avoid being set on the ledge. There is a channel to the northward of Jack-Knife with five fathoms water, but no stranger should attempt it.

Jack-Knife Ledge.

On the southern side of the entrance will be seen a bare rocky islet, called Ellingwood's Rock, which lies **N.** $\frac{3}{4}$ **E.** from the northern end of Seguin Island at a distance of four hundred yards. It is nearly a mile **SE.** by **E.** $\frac{1}{4}$ **E.** from Jack-Knife Ledge,—the channel passing directly between them. It lies **NE.** and **SW.**, and on its southeastern face is shoal; but the northwestern face, which is towards this channel, is quite bold-to and may be approached quite closely with not less than four fathoms water. There is a channel with seven fathoms between it and Seguin, which may be safely passed through by keeping midway between the rock and the northern point of the island.

Ellingwood's Rock.

Seguin Ledges are a group of bare rocks lying on the eastern side of the channel and surrounded by a shoal and rocky bottom. They bear **E.** by **S.** from Jack-Knife Ledge, one mile distant, and **NE.** by **N.** from Seguin Island, about one thousand yards. They extend **N.** by **E.** and **S.** by **W.**, and are about three hundred yards long; and vessels should give the bare rocks a berth of about three hundred yards.

Seguin Ledges.

Pond Island Bar is the first shoal on the western side of the channel after passing Jack-Knife Ledge. It is a very extensive shoal,—making off from the Fox Islands about **E.** by **S.** for three-quarters of a mile. At a distance of five-eighths of a mile from these islands it has six feet water, and it is not safe for strangers to go inside of the buoy, which is a nun of the second class (No. 3), painted black, and placed on the southeastern point of the reef.

Pond Island Bar.

Abreast of buoy No. 3, bearing **E.** by **S.**, and nearly three-quarters of a mile distant, is a ledge with eight feet at low water, known as White's Ledge, which is not in the way except for vessels beating in or out of the Kennebec. It is eight hundred yards **NE.** by **N.** from Seguin Ledges, and is marked by a spar-buoy (No. 1) painted black, with the letters "W. L." marked upon it in white. The buoy is placed about fifty feet **E.** from the eastern point of the ledge.

White's Ledge.

The Whale's Back is a bare rock, about one hundred and fifty yards long and seventy-five wide, lying on the western side of the channel, and surrounded by shoal water. It is two hundred yards **SSW.** from Salter's Island, between which and the rock there is not less than eleven feet water; but the bottom is much broken, and strangers should not attempt this passage. On its southeastern side it is tolerably bold-to, so that it may be approached within one hundred yards with not less than three fathoms water.

The Whale's Back.

The Sisters are the next obstructions in this channel, and are on the eastern side of it. They have been already described as three bare rocky islets, (see page 387,) and are easily avoided, as they are always visible. They lie **E.** by **S.** from The Whale's

The Sisters.

Back, one mile and a half distant, which is here the width of the channel. Next to the northward of The Sisters, and also on the eastern side of the channel, lie the **Black Rocks.** They are three bare rocky islets, bold-to on all sides, lying **N.** by **E.** ¼ **E.** from The Sisters, seven-eighths of a mile distant, (see page 387,) and bear **S.** ½ **W.** from Griffith's Head, a little more than a mile distant.

When up with the southernmost of the Black Rocks there will be seen, bearing about **N.** by **E.,** a black spar-buoy (No. 1). This is on Sloop Ledge, which lies nearly seven hundred yards **NW.** by **N.** from the largest of the Black Rocks, and has six feet at low water. ***Sloop Ledge.*** The buoy is placed **S.** from it, and bears **SW.** by **S.** ¾ **S.** from Griffith's Head, distant one mile, and you must pass to the eastward of it going in.

Between Sloop Ledge and the shore are a series of bad rocks, one of which is awash at low water, called *Little River Ledges,* as they lie off the mouth of that river. The whole ground inside of Sloop Ledge is full of rocks, and vessels must be careful not to go to the westward of that buoy.

After passing between the Black Rocks and Sloop Ledge the channel is clear to the mouth of the Sheepscot. Here, when abreast of Griffith's Head, there will be seen, bearing about **N NE.,** a spar-buoy painted red and black in horizontal stripes. This is on Griffith's ***Griffith's Head Ledge.*** Head Ledge, which has seven feet at mean low water (see page 383) and scarcely five feet at low spring tides. It bears **NE.** by **N.** from the Black Rocks, one mile and a quarter distant, and **E.** ¼ **S.** from the Outer Head, eight hundred yards distant, and must be left to the westward.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING SHEEPSCOT RIVER.

III. ***Coming from the Westward, inside of Seguin Island.***—Give Fuller's Rock a berth of about seven-eighths of a mile to the northward and westward, and when it is in range with Cape Small Point and you are in sixteen fathoms water, steer **NE.** by **E.** ¼ **E.** for the southernmost of the Black Rocks. This course leads, with not less than four fathoms, past Seguin; between Jack-Knife Ledge and Ellingwood's Rock; past Seguin Ledges; and between Pond Island Bar and White's Ledge. Continue it until past the entrance to the Kennebec, taking care that the tide, if flood, does not set you on to Pond Island Bar, or, if ebb, on to White's Ledge. On this course, when Pond Island Light-house is exactly on with the southern point of The Whale's Back, and you are in ten fathoms water, steer **NE.,** which leads safely past the Black Rocks and Sloop Ledge with not less than eight fathoms water, and passes about two hundred yards to the eastward of Griffith's Head Ledge. On this course continue until Hendrick's Head Light-house bears **N.** by **E.** ¾ **E.,** with twenty-two fathoms water, when steer **N.** by **E.** ¼ **E.,** and proceed as directed on page 386.

HARBORS OF REFUGE

IN THE SHEEPSCOT RIVER AND ITS VICINITY.

The different harbors of refuge along the shores of this river have been already described; but some further mention may be of use to strangers in case of necessity.

DAMISCOVE HARBOR.

This small but comfortable anchorage is formed by the southern end of Damiscove Island splitting into two points and thus forming a long and narrow cove, which extends inland about eight hundred yards. Contrary to what would be supposed from its position, the harbor is not available in northerly winds, as a heavy swell sets into it, making the anchorage uncomfortable. In southerly winds it is smooth and comfortable, the southeasterly swell being broken off by The Motions and the other ledges outside of it.

SAILING DIRECTIONS.

To enter from the Southward and Eastward.—Bring the southeastern point of the island (which is high and bare of trees) to bear **N NE.,** one mile distant, when the harbor will be completely open, and there will be thirteen fathoms. Then steer **N.** by **E.** ½ **E.,** which course will lead, with not less than nine fathoms, up to the entrance, and will leave The Motions well to the westward. Now keep the middle of the harbor, and anchor at pleasure, in from two to three fathoms, soft bottom.

Or, coming from the Eastward close in, hug the southeastern point of Damiscove, passing within two hundred and fifty yards of it; and when the harbor is fully open steer up the middle of it, and anchor as before. Near the head of the harbor a chain crosses from shore to shore, to which the fishermen are accustomed to make fast.

CAPE HARBOR

is formed by Cape Newagen on the north and Cape and Hunting islands on the south; and its eastern side is shut off from the easterly swell by a bare rocky islet, called **The Ark.** It is neither very comfortable nor roomy,—being open to the southeasterly swell except at low water. Thirteen feet can be carried into it, with good holding-ground.

SAILING DIRECTIONS.

To enter this harbor from Sheepscot River.—Keep the southern point of Southport Island close aboard, rounding it at a distance of a few yards with three fathoms, and steer **E.** ¾ **S.** for The Ark, (at the eastern end of the harbor), carrying not less than thirteen feet. Anchor off the northern end of Cape Island, about in the middle of the basin. If the tide be ebbing, hug Southport closely, to avoid the rocks off Hunting Island.

There is quite a settlement at this place, and considerable fishing interest.

CHRISTMAS COVE.

This is a cove of very little importance, (see page 378,) lying one and a quarter miles to the northward of Cape Harbor. The chart is the best guide to it, and no directions can be given for it except to keep the eastern shore aboard.

HENDRICK'S HARBOR

is a most excellent harbor for vessels of light draught, and is (see page 378) contained between Southport Island on the **N.** and **E.** and David's Island and Joe's Island on the **W.** When once inside it is a complete land-lock, but there is but little water at low tides, and vessels usually moor by a line to one of the wharves in the settlement. The entrance is extremely narrow and crooked, and strangers should not attempt to enter unless in case of necessity.

SAILING DIRECTIONS.

To enter Hendrick's Harbor.—Keep as nearly as possible in the middle of the passage between David's and Joe's islands, only taking care to leave an iron spindle, which stands exactly in the entrance, close-to to the northwestward. This spindle is on *a bad rock, bare at low water,* which lies almost exactly in the centre of the passage. Keep in the middle after passing this until you are near the extreme southeastern point of David's Island, when sheer off suddenly to the southward, to avoid *a dangerous sunken ledge* off that point. When the harbor is fairly open, steer up for the settlement and anchor off the wharves, in eight feet at mean low water. Nine feet may be taken between David's and Joe's islands at mean low water.

HERMAN'S HARBOR

lies on the eastern shore of Georgetown Island, one mile and three-eighths to the northward of Griffith's Head, (see page 379,) and has good water and is tolerably easy of entrance. The following are the best directions that can be given for entering it.

SAILING DIRECTIONS.

Keep about one hundred and fifty yards from the western shore and in about four and a half fathoms water, to avoid *a ledge, bare at low water,* lying near the shore. Then pass between that ledge and *another, also bare at low water,* on the northeastern shore, (making off from the small island which forms the eastern point of entrance to the harbor,) carrying not less than four fathoms water. After passing these, steer about **N.** ¼ **E.**, or nearly up the middle of the passage, and anchor in from four to seven fathoms under either shore. The bottom is excellent,—being mostly stiff mud, very sticky.

At low water any one can enter this harbor, as the two ledges always show themselves then, and it is only necessary to keep midway between them until past the entrance, when steer up the middle of the harbor, as directed above.

FIVE ISLANDS HARBOR.

There are several entrances to this harbor, but the best is to the northward of the largest island, the most easterly of the five, (page 379.) This entrance is wide and tolerably safe, and leads between the northernmost island and the easternmost; and is obstructed only by *a ledge dry at low water* which extends off from the southern end of the former.

SAILING DIRECTIONS.

To enter Five Islands Harbor, keep the southern shore close aboard. It is quite bold-to, and perfectly safe to approach except with a strong ebb-tide, when, if approaching too closely, there is

danger of being set upon the point of the island. When the harbor fairly opens by the northern point of the easternmost island haul short around that point and anchor off the settlement, in from three to five fathoms, soft bottom. Eight fathoms can be carried in past the large island.

This is a good harbor of refuge, and is comparatively safe in all weathers.

LITTLE SHEEPSCOT RIVER.

No sailing directions can be given for this narrow passage. It separates McMahan's and Georgetown islands, and unites the Sheepscot with the Sasanoa, and vessels can only pass through it with a fair tide unless they have a strong fair breeze. It is usual to keep the middle of the river until it widens out, (which it does about half a mile above its mouth,) and then haul over to the eastern shore, to avoid *a dangerous sunken rock* lying in the middle of the passage. After passing this the channel is unobstructed to its entrance into Goose Rock Passage; but the strength of the current is such as to make it dangerous for vessels to attempt to enter the Sasanoa by this passage. By following the above directions not less than five fathoms will be taken through into Goose Rock Passage.

EBENICOOK HARBOR

is on the eastern side of the river, and is formed by a deep indentation on the northern shore of Southport Island and by the group of islands which lie to the northward of Dogfish Head. The entrance is between Dogfish Head and the Green Islands, and is one mile to the northward of Hendrick's Head. It is safe, easy of access, commodious and free from ice in the winter.

SAILING DIRECTIONS.

The entrance to Ebenicook Harbor is unobstructed, and any stranger may enter it by rounding Dogfish Head, keeping about fifty yards from it in about six fathoms water, and anchoring anywhere under the western shore of the harbor in from three to six fathoms. *But, if bound into Town's End Gut*, when fairly past the head steer up for the northern point of Southport, carrying not less than three and a half fathoms, and keep the Green Island shore aboard for a few hundred yards, to avoid *a long line of ledges* which extends from **Maddox's Cove** (in the southwestern part of the harbor) into the very centre of the passage. This line of rocks is dry in many places at low water, but the northernmost rock has fifteen feet at mean low tides. By these rocks Ebenicook Harbor is divided into two parts. There is equally good anchorage to the eastward and westward of them.

SAILING DIRECTIONS

FOR PASSING THROUGH TOWN'S END GUT.

From Ebenicook Harbor.—This passage has been before described, (see page 381.) After clearing the long ledge, mentioned above, keep the middle of the passage between the Green Islands and Southport, or steer for the bluff on the southwestern end of Indiantown Island, carrying not less than three fathoms. When up with the northern end of Southport gradually round the point, keeping about one hundred and fifty yards from it, and having about five fathoms. By this means you will enter Town's End Gut with eighteen feet at low water, and will avoid *the long ledges, dry at low water*, lying S. of Indiantown Island, which narrows the channel to a width of about two hundred yards. (There is a red spar-buoy (No. 2) on the southern end of these ledges.) When safely round the northern point of Southport, the draw-bridge will be seen ahead to the southward and eastward. Keep the middle of the passage until close to the draw, when run for it and pass through, carrying not less than five fathoms. After passing the draw-bridge there is but one danger,—*a rock with seven feet at low water*, which lies nearly in the middle of the Gut, off the mouth of Thompson's Cove. To avoid it, keep the high bluff head on the northern side of Thompson's Cove close aboard until the cove is open, and then gradually edge over to the other shore. After clearing this rock keep the middle of the channel, and you will take not less than four fathoms into Booth Bay.

The tidal current, aided by the natural fall of the bed of the stream, flows through these passages on the ebb with great velocity. Nor is it safe for strangers to pass here even on the flood. None unacquainted with the set of the currents should attempt to pass without a pilot.

There are many other passages into Town's End Gut.—One exists between Boston Island and the Green Islands, through which three and a half fathoms may be carried; one between The Spectacles and Boston Island, with ten feet; a good channel with not less than three fathoms between Ram Island and Sweet's Island; and, finally, a passage, called **Back River**, runs from Cross River behind Barter's, Hodgdon's, Sawyer's and Indiantown islands; but is, however, only available at high water.

Sailing Directions--Town's End Gut. ***The channel leading from the Sheepscot, between Ram Island and Sweet's Island,*** is the one used by vessels bound to Booth Bay from Wiscasset, and seventeen feet at low water can be carried through it. Those using it steer **E. by N. ½ N.**, between the two islands, keeping as nearly as possible in the middle of the passage, with about five fathoms water, until abreast of the northeastern point of Sweet's Island, when the northeastern end of The Spectacles will be in range with the northern end of Southport Island. Then steer for the bluff on the southwestern end of Indiantown Island until abreast of the northern point of The Spectacles. Go close to the bluff on the Indiantown shore, as it is bold-to. Now steer for the northern end of Southport, carrying not less than three fathoms, until you are about three hundred yards from it, when head up for the draw in **Town's End Bridge.** You must avoid *a bad ledge, bare at low water*, lying off the northern shore of Sweet's Island, by keeping the northern side of the channel. Also avoid the shoals between Indiantown and the northern point of Southport by keeping about one hundred and fifty yards from the latter point in passing it. Both of these ledges are, however, bare at low water.

JEWETT'S COVE.

This is an excellent anchorage, lying on the western side of the river, just above the mouth of Goose Rock Passage. It is an indentation in the shore of Westport Island, and though exposed to the southeasterly swell affords good shelter and excellent holding-ground. There is a settlement here, a good country store and other facilities. (See page 381.)

For Long Cove, McCarty's Cove and the other small anchorages along the Sheepscot River, the chart will be found to be the best guide.

LIGHT-HOUSES.

NAMES.	Latitude.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		m. s.	Feet.	
Hendrick's Head Light-house	**43 49 20**	**69 41 24**	**4 38 45.6**	Revolving.	**0 30**	**40**	**11**
Seguin Light-house	**43 42 25**	**69 45 31**	**4 39 2.1**	Fixed.	.....	**180**	**20**

TIDES.

	Bath.	Wiscasset.
Corrected Establishment	**12h 13m**	**11h 12m**
Mean Rise and Fall of tides	**6.1 ft.**	**9.4 ft.**
Mean Rise and Fall of Spring tides	**6.5 ft.**	**9.9 ft.**
Mean Rise and Fall of Neap tides	**5.5 ft.**	**8.9 ft.**
Mean duration of Rise	**5h 54m**	**6h 30m**
Mean duration of Fall	**6h 29m**	**5h 54m**
Rise of highest tide observed	**7.9 ft.**	**10.6 ft.**

CURRENTS.

The current of flood affects the course of vessels coming from the eastward, having a tendency to set those passing to the northward of The Bantam on to The Motions, and those passing south of The Bantam on to that rock. It sets with considerable force on to The Cuckolds, making those rocks very dangerous in thick weather. In the river channel the current of both tides sets directly up or down the river; but vessels in beating must be careful in passing Bull's Ledge and all the rocks above it, as they lie in the centre of the channel and the current sets directly over them.

Particularly should vessels, passing the entrance to Goose Rock Passage, be careful that the flood does not set them on to Eight Feet Ledge or Clou's Ledge; and, if passing between these ledges and the western shore, that the ebb does not have the same effect; for here the current of the Sasanoa sets with great force directly across the channel of the Sheepscot, and a vessel with a light breeze is apt to run ashore on one or the other of these obstructions. Vessels passing to the westward of Clou's Ledge sometimes have to use their boats to keep them off the rocks.

There is a strong set of current in and out of Cross River, but vessels may easily avoid the set of the flood by keeping the Westport shore aboard.

In passing The Narrows with an ebb tide hug the Davis' Island shore, to avoid being set on to Clough's Point. With the flood keep the middle.

The velocity of the current in the narrower parts of the Sheepscot River is very great,—being as high as four and even five miles an hour. From Fowle's Point to The Narrows vessels cannot make headway against an ebb tide unless they have a strong breeze aft.

VARIATION OF THE COMPASS.

The magnetic variation in Sheepscot River for 1879 is 18° 48′ W., with an annual increase of 2½′.

ICE IN SHEEPSCOT RIVER.

It is rarely that this great river is so obstructed by ice as to become a hindrance to navigation; but during such severe winters as that of 1874–5, it is closed from Wiscasset to Fowle's Point,—the obstruction taking place in February and remaining about two weeks. Westerly winds favor local formations; while northerly winds have a tendency to remove the ice; and those from the southward affect the formations only in so far as they cause a rise in the temperature. Owing to the strength of the current of ebb the ice can never attain thickness or extent sufficiently to prove much of an obstruction to navigation.

COAST FROM SHEEPSCOT RIVER TO KENNEBEC RIVER.

From Griffith's Head to the westward the shore-line takes a direction about **SW. ½ W.** to the southern end of Georgetown Island, called **Indian Point.** From Griffith's Head to the mouth of Little River it is quite low, presenting to the view a long sand beach interspersed with hillocks of sand, and backed by hills mostly wooded with spruce, fir and hemlock.

Little River.

Little River is bare at low water, and not navigable even for flat-boats, except at high tide, and is of no importance. A group of very bad ledges lies off its mouth. (See page 389.)

Salter's Island.

From Little River the shores are high, rocky and bold to Indian Point, which latter, however, is low and very shoal. A few stunted firs grow here and there on the point. To the southward of Indian Point, separated from it by a passage three hundred yards in width, is a rocky sparsely wooded island, called Salter's Island. It lies nearly **NE.** and **SW.**, and is about half a mile long and about three hundred yards wide, its southern end rocky and bare of trees except one lone spruce tree, which stands on the point and is a capital landmark.

The passage between Indian Point and Salter's Island has seventeen feet at mean low water, but is very narrow and crooked.

Sagadahoc Bay.

To the westward of Indian Point is a deep indentation in the shore of Georgetown Island, forming a large cove, known as Sagadahoc Bay. It is a little more than a mile long, with an average width of six hundred yards. At low water it is bare throughout four-fifths of its length, and, being open to the sea, is of no use as a harbor. The holding-ground is also poor.

Stage Island.

Three-eighths of a mile to the westward of Salter's Island lies a rocky and thinly wooded island, of very irregular shape, known as Stage Island. It lies **N.** and **S.**, and is three-eighths of a mile long, and is separated from the southern shore of Georgetown by a narrow passage only about forty yards in width, with about one foot at low water. This is a good boat-passage, by means of which boats may avoid the strong current of the Kennebec.

The space between Stage Island and Salter's Island is called **Stage Island Bay.** It has good holding-ground, and is a common anchorage for vessels when waiting to enter the Kennebec. The depth is from two to five fathoms, soft bottom.

KENNEBEC RIVER.

To the westward of Stage Island lies the entrance to Kennebec River, which is twenty-one miles **E. by N.** from Cape Elizabeth; sixty-five miles **NE. ¼ N.** from Cape Ann; and nineteen miles **W.** from Monhegan Island. The true mouth of the river is contained between the southern end of Stage Island and a low sandy point a little over half a mile to the westward of it, called Hunniwell's Point; but the approaches are so obstructed by islands and bare rocks that, for purposes of navigation, the entrance to the Kennebec is supposed to begin at Seguin Island, and from this island the above bearings and distances are taken. Seguin Island lies one mile and three-quarters **S. by W. ½ W.** from Salter's Island; four miles and three-quarters **SW. by S.** from Griffith's Head; six miles **SW. by W.** from Cape Newagen; six miles and a half **W. ¼ S.** from Damiscove Point; and **E. ¼ S.** three miles and a quarter from Cape Small Point, the extreme eastern point of entrance to Casco Bay.

Seguin Island.

Seguin Island is a very prominent, high, rocky island, with precipitous shores. It lies **N.** and **S.**, is eleven hundred yards long and two hundred and fifty wide, except near its southern end, where a bare rocky spur, of less elevation than the rest of the island, makes off to the eastward, increasing the width of the island to half a mile. The junction of this spur with the main island forms a small cove on its northern side, which offers a shelter in southwesterly winds and a convenient landing-place. The island is mostly bare of trees except a small grove of spruce and fir on its northeastern face.

Seguin Light-house.

On the highest part of Seguin Island, and nearest to its southern end, is built Seguin Light-house, which shows a fixed white light, of the first order of Fresnel, from a height of one hundred and eighty feet above sea-level. The keeper's house is of brick and connected with the tower by a low-walled passage, roofed and used as a work-room. The light is visible twenty nautical miles at sea from the deck of any vessel large enough to raise the eye of the observer fifteen feet above sea-level. Its geographical position is

Latitude ..... **43° 42′ 25″ N.**
Longitude ..... **69° 45′ 31″ W.**

Fog-signal.

A ten-inch steam fog-whistle, giving blasts of eight seconds' duration at intervals of fifty-two seconds, is placed on this island near the light-house.

The Whale's Back.

Passing Seguin, bound into the Kennebec from the westward, there will be seen a little to the northward the rocky shores of Salter's Island; and on a nearer approach the lone tree on its southern point will be seen. In range with Salter's Island will be seen a bare rocky islet, off its southern shore, which is called The Whale's Back, and forms one of the obstructions in the Kennebec Entrance. Bearing nearly **N.** will be seen Stage Island; and

Stage Island Bay will be directly ahead. On the western side will be seen a bare rocky island, surmounted by a building of a peculiar brown color, attached to which is a white light-tower. This is Pond Island, lying on the western side of the entrance, one and five-eighths miles **N.** from Seguin Island, and five-eighths of a mile **W. ¼ S.** from the southwestern end of Salter's Island. It is destitute of trees and almost of grass, is a quarter of a mile long and about three hundred yards broad, and lies **N.** and **S.** Near the centre of the island is built the light-house,—a white tower, eighteen feet high, showing a fixed white light, of the fifth order of Fresnel, from a height of fifty-four feet above sea-level, visible thirteen miles. Near the tower is a **fog-bell**, struck by hand. The light-house is connected with the keeper's dwelling by a brick work-room; and its geographical position is

Pond Island and Light-house.

Latitude ..... **43° 44′ 23″ N.**
Longitude ..... **69° 46′ 14″ W.**

Next to the westward of Pond Island will appear a small island of about the same size, covered with a growth of stunted fir trees. This is Wood Island, a quarter of a mile to the westward of Pond Island and the same distance **S.** from the southern point of Hunniwell's Beach. It is connected with the latter at low water by a bare sand-spit; but a narrow channel, with seventeen feet at low water, separates it from Pond Island.

Wood Island.

Over the low beach behind Wood Island, (called **Hunniwell's Beach,**) and to the westward, will appear, first, a square granite fort, with outbuildings, stone-sheds and derricks surrounding it. This is **Fort Popham,**—a fortification as yet in an unfinished state,—occupying the whole of the northern end of Hunniwell's Point. To the westward of it will appear two high round hills,—the valley between them being occupied by a large square house, near which is a flag-staff. The eastern and highest hill is **Sabino Head**, and the other **Hunniwell's Hill.** The house will not show until past **Ellingwood's Rock,**—the small bare rock lying a quarter of a mile to the northward of Seguin.

Hunniwell's Point.

On approaching the mouth of the river two bare rocky islets will open, lying close together in the middle of the river,—the westernmost one nearly in range with a high bluff on the eastern shore. These are The Sugar Loaves, known, respectively, as the **North Sugar Loaf** and **South Sugar Loaf;** and the bluff in range with the former is called Gilbert's Head, and is the southern end of Long Island. The head is directly opposite to Fort Popham.

The Sugar Loaves.

Still proceeding to the northward, a high hill opens on the western shore of the river. This is Cox's Head,—the highest land near the entrance; and is bare of trees and shows the remains of an old earthwork on its summit.

The course of the river now leads past Pond Island, (leaving it to the westward,) between The Sugar Loaves and Hunniwell's Beach, and towards Fort Popham. Passing The Sugar Loaves, you may look up to the northward and eastward into a cove or bay opening into the land just to the westward of Stage Island. This is Heal's Eddy, a shallow cove, which makes into the southern shore of Georgetown Island just to the westward of Sagadahoc Bay. Like the latter, it is for the most part bare at low water, but is often used as an anchorage by vessels waiting for wind or tide.

Heal's Eddy.

Next to the westward of Heal's Eddy will be seen a narrow passage separating Long Island from the southwestern end of Georgetown. This is **Long Island Narrows**, running between Long Island and Georgetown Island for half the length of the former, after which it expands into a wide bay, called Todd's Bay, almost wholly dry at low water. Todd's Bay is partly separated from Kennebec River by Long Island and a narrow wooded island to the northward of it, called Marr's Island.

Todd's Bay.

When abreast of the North Sugar Loaf the buildings on Hunniwell's Point will show plainly; and next to the fort, in prominence, is the **Ocean House**, a large wooden building surmounted by a railed observatory and a flag-staff. The house is gradually falling to decay, and stands on the shore just to the southward of the fort.

Passing Fort Popham, a wide bay will open to the westward, extending to the southward and westward, between Cox's Head on the north and Hunniwell's Point on the south. It is called Atkins' Bay, is nearly all bare at low water, about one mile and a quarter in length, and its width at the entrance is five-eighths of a mile. The southern end of the bay is only a little over a quarter of a mile from the outer beach. The flats in this bay are covered with fish-weirs, which extend out almost to the edge of the channel, and considerable trade is done here in shad and salmon. The course of the river now leads between Gilbert's Head on the right and Cox's Head on the left.

Atkins' Bay.

Gilbert's Head is, as before stated, the southern end of Long Island, and is a high rocky bluff with a few trees on it. This is one of the narrowest places on the river,—it being here only about three hundred yards wide, with a very strong tidal current. Long Island lies along the western shore of Georgetown Island, is a little over a mile long, but in no place wider than three hundred and fifty yards, its surface hilly and undulating, partly wooded, partly cleared, and with a few houses on it. The northern point is low and narrow and has a few stunted fir and spruce upon it.

Long Island.

Cox's Head is the eastern extremity of a very irregularly shaped peninsula on the western shore of the river, making out from the mainland to a distance of nearly half a mile. The southern shore of this peninsula marks the northern boundary of Atkins' Bay, while its northern face, by its peculiar shape, forms a small, nearly circular cove, bare at low water, called **Wyman's Bay**, which is also occupied by fish-weirs. The eastern face of Cox's Head is very bold-to, and may be approached closely with four fathoms water.

Cox's Head.

Dix Island, a small, rocky island, lies just clear of the northern point of Cox's Head, with which at low water it is connected. Its southern end is quite low, bare of trees and has a few houses upon it; but the northern end is higher. This island lies three hundred and fifty yards from shore and exactly on the end of the flats, and forms, with Cox's Head, the eastern shore of Wyman's Bay. **Dix Island.**

Passing Dix Island you come to Marr's Island, which lies an eighth of a mile to the northward of the northern point of Long Island, on the eastern side of the channel. It is very narrow, but three-quarters of a mile long, and spruce and fir in a sparse and stunted growth are the only trees upon it. The northern end is low and nearly bare. **Marr's Island.** Between Marr's Island and Long Island is the entrance to Todd's Bay, contained between those two islands and the shore of Georgetown.

One mile above Cox's Head, and nearly in the middle of the river, lies a small rocky island, wooded mainly with fir, called **Perkins' Island.** It may be passed on either hand, as there is a deep channel with seven fathoms water to the eastward of it, between it and Marr's Island; but the main channel is on its western side.

When nearly up with Perkins' Island a large cove or bay will open to the westward, at the head of which will be seen a village with several saw-mills. This village is called **Parker's Head Village,** from the name of the high bluff head on the northern side of the cove, which is called Parker's Head. Some lumber trade goes on at this village, there being a large pond and dam, and a channel with ten feet up to the anchorage. **Parker's Head.**

The channel now leads between Perkins' Island and Parker's Head, and a long cove or bay will open on the eastern side of the river one mile above Perkins' Island. The shores on both sides are bluff and wooded, but not very bold,—flats making off on either hand. Two precipitous heads mark the entrance to this bay, and in the centre will be seen two small low islands. This passage is the mouth of Back River, which separates Georgetown and Arrowsic islands. It begins in Hockomock Bay, in the Sasanoa River, and takes a general course **S SW.** for five miles to its junction with the Kennebec. At its junction with the Sasanoa it is dry at low water; but eight feet at mean low water may be taken from the Kennebec up the river for three miles and a half. The channel is narrow and crooked, and obstructed by flats and ledges. **Back River.**

The high head on the northern side of the entrance to Back River is called **Bald Head,** and is a very prominent headland,—forming the southern end of Arrowsic Island, which lies between Back and Sasanoa rivers on the east and the Kennebec on the west. Its shore forms the eastern bank of the last-named river from Bald Head to Bath. It is six miles long and of a very irregular shape, and is well settled and cultivated. **Arrowsic Island.**

The channel of the Kennebec leads past Bald Head, and between the southern shore of Arrowsic and the Phipsburg land. Here the river narrows to a width of only a quarter of a mile; and three-quarters of a mile to the westward of Bald Head it passes between a low partly cleared point, called **Weasel Point,** on the west, and a bare rocky hill on the east, called **Squirrel Point,** the southwestern point of Arrowsic.

Opposite to Squirrel Point will be seen another village, surrounded by cleared and cultivated lands. This is **Phipsburg Centre,** and is of little importance, except from its vicinity to the saw-mills in Drummore Bay, just above it. It is a little over two miles above Parker's Head Village and about four below the city of Bath. About a mile and a quarter above it, and on the same side of the river, are situated a number of saw-mills worked by water-power, and called **Drummore Mills.**

The shore makes a broad sweep to the westward just above Phipsburg, and forms a shallow cove, called Drummore Bay, at the head of which stand the mills. The eastern shore of this bay is formed by a rocky island, partly wooded, with partly cleared gently sloping shores at its southern end; but on its western face are meadow and marsh lands. The bay is nearly all dry at low water, but at high water there are three entrances to it. The main channel is close along the Phipsburg shore, passing to the westward of a small, low, bare island surrounded by ledges, called **Goat Island.** There is also a passage to the northward of Goat Island with ten feet across the ledges; and a third between the main shore and the northern end of the large island forming the eastern side of the bay, which is called Lee's Island. It is three-quarters of a mile long and lies nearly **N NE.** and **S SW.** At its southern end the shores are partly cleared and slope gradually to the water, while the eastern face is precipitous and bold. The slopes are wooded with a stunted growth of fir and a few spruce trees. **Drummore Bay.** **Lee's Island.**

Near the northern end of Lee's Island, exactly in mid-river, lies a low grassy islet, known as Ram Island, with a good channel on each side of it, either of which may be used, according as the tide serves. That to the eastward has ten fathoms water, that to the westward has six fathoms and a quarter. Several small bare rocks lie a quarter of a mile to the southward of the island, and are called **Pettis' Rocks.** There is a good channel on each side of these rocks; but the one mainly used is between them and Lee's Island, with nine fathoms water. **Ram Island.**

Passing Ram Island, the course of the stream continues about **N.** by **E.,** with a width of three-eighths of a mile, past the northern entrance to Drummore Bay on the west; past a low marshy point three-eighths of a mile above Ram Island, called **Indian Point,** also on the western shore; and there will be seen ahead a bold, rocky, precipitous bluff, apparently in the middle of the river. This point is Bluff Head, and is one mile above Ram Island and two miles below Bath. What appears to be the widest branch of the river, that on the right of the bluff, is really a shallow cove, called **Fisher's Eddy,** used by vessels when obliged to anchor on account of unfavorable tides. At Bluff Head the river is only about two hundred and fifty yards wide, with a depth in the channel of between fourteen and seventeen fathoms. The velocity of the tidal current, especially on the ebb, is therefore very great, and Fisher's Eddy offers the only convenient place for anchorage. There is somewhat of a settlement at this cove, on its southern shore. **Bluff Head.**

Morse's Cove. From Bluff Head the river, with a width of from two hundred and fifty to three hundred and seventy-five yards, continues in a northerly direction for one mile. And here opens another good anchorage, on the western shore, called Morse's Cove, with good holding-ground, clear of the current, in four fathoms at low water.

A little over a quarter of a mile above Morse's Cove the river suddenly turns to the westward, running nearly at right angles to its main course, with a width of from three hundred to three hundred and fifty yards and a very powerful and dangerous current. This abrupt turn is called Fiddler's Reach, and is one of the most dangerous places in the river.

Fiddler's Reach. The reach is about half a mile long, with dangerous cross-currents and eddies until you are past the gently sloping point of cleared land on the northern side of the reach and you open the river in its course to the northward beyond it. This point is called **Doubling Point**; and when abreast of it a wide cove will open to the westward, at the head of which will appear a number of saw-mills and a surrounding settlement. This is **Winnegance Creek**, and the settlement is known as **Winnegance**. A considerable lumber trade goes on here. To the northward of the mills,

Hospital Point. and directly ahead when passing Doubling Point, will be seen a low point surrounded by marsh land, called Hospital Point. Here the river turns again as abruptly as before, and the channel, passing between Doubling Point on the east and Hospital Point on the west, takes a due **N.** by **E.** course past the city of Bath, which occupies the whole of the western shore from Hospital Point to Telegraph Point, four miles above.

At **Bath** the average width of the river is about three-eighths of a mile. There is good anchorage anywhere off the wharves, as the ledges are all buoyed and the holding-ground is very good.

The **Sasanoa River** joins the Kennebec abreast of the centre of the city, coming in between **Preble's Point**, the northern point of Arrowsic, and **Towesic Point**, the southern end of Woolwich. A steam ferry-boat plies between Bath and Woolwich; and a line of steamers, built specially for the service, affords daily communication between Bath, the Sheepscot, and Booth Bay.

Telegraph Point, the northern extremity of the city of Bath, is a high, bluff and precipitous point nearly opposite to the village of **Woolwich**. Here the river has a width of about two hundred and fifty yards, with a deep channel

Telegraph Point. and strong current; and, passing Telegraph Point, rapidly widens again, forming a sort of basin three-quarters of a mile wide, but full of islands, which contracts the channels and makes them difficult of navigation.

Telegraph Point receives its name from the fact that the telegraph wire here crosses the river,—being stretched between two poles, one on the Woolwich side and one on the summit of this point, thus elevating it sufficiently for vessels to pass under it.

After passing Telegraph Point keep the eastern shore aboard, or turn to the westward among the islands. The latter is the main channel, and is called **West Branch.** The eastern passage is called **East Branch**, and is narrow and crooked at its northern end. In the middle of the river, on passing Telegraph Point, there will be seen a large island, partly cleared and settled, but wooded here and there with oak, birch, maple and pine,—the land being of moderate height and sloping

Lines' Island. gradually towards the water. This is Lines' Island, and divides the channel of the river into its East and West branches. It lies **N.** by **E.** and **S.** by **W.**, and is three-quarters of a mile long; and off its southeastern point, about a hundred yards distant, is a small low island, called **Thorne's Island.** Here begins the East Branch, running between Thorne's Island on the east and Woolwich on the west, with a width at the entrance of about two hundred yards. Passing Thorne's Island, it continues between the Woolwich shore and Lines' Island for half a mile to the northern end of the latter, where it rejoins the main river by a narrow and much obstructed channel, called **Burnt Jacket Channel.**

If you intend to pass up by the Western Branch of the channel, round Telegraph Point close-to and steer to the westward, when you will first pass to the northward of a low island, called **Wood Island**, going between it and Thorne's Island. This islet is wooded with birch, spruce, oak and maple, and only a hundred and fifty yards to the westward of it

Crawford's Island. lies another islet, low and grassy, called Crawford's Island, which also leave to the southward. Two hundred yards to the northwestward of Crawford's is another low bare islet, called **Ram Island**, the last of the group. The channel passes between Ram Island and the southwestern point of Lines' Island, and then turns to the northward, running between Lines' Island and the mainland, until it joins the main river.

Five-eighths of a mile to the northward of Lines' Island the river takes a turn to the northwestward and passes between two prominent points which here contract the channel to a width of only about two hundred and seventy-

The Chops. five yards. This passage is called The Chops; and here a very strong tidal current rushes through, especially on the ebb-tide. The shore on the northeastern side of The Chops is moderately high, cleared and settled. The point on the southwestern side is called **Chops Point**, and is wooded with pine, spruce and a variety of hardwood trees.

Passing The Chops, the channel turns to the northeastward; but here the shores fall away to the southward and westward and form a very large though shallow bay, (communicating with the Androscoggin River,) called **Merrymeeting Bay.** It is full of shoals and is entirely unfit for strangers. Into its northern side flows a very shallow stream, called

Merrymeeting Bay. **Abagadusset River**, into which only two feet can be carried through a narrow and crooked channel. Into its northwestern corner flows the **Cathanse** or **Cathance River**, which leads to **Bowdoinham**, about a mile and a half above its mouth; and at its southern end the Androscoggin River discharges itself through narrow and shallow channels with not more than a foot of water at low tides. The bar at the entrance to Cathanse River has only one foot at mean low water and is bare at low spring tides.

The Androscoggin River has a general course about **SW.** for nearly four miles, between gently sloping banks of moderate height, diversified with cleared lands and groves of trees. Then it takes an abrupt turn nearly at right angles, running nearly **NW.** about a mile and a half to the town of **Brunswick.** The channel of the river is much obstructed and greatly diminished in width by several islands, which occupy the largest part of the river-bed and render the channel extremely narrow and crooked. Two bridges cross the stream,—one called **Bay Bridge,** about two miles above its mouth, where **Mustin's Island** lies in the middle of the river; and one at Brunswick, which carries the Androscoggin Railroad. **Androscoggin River.**

No stranger can enter Androscoggin River or Merrymeeting Bay without a pilot.

Above The Chops the Kennebec takes a **NE.** by **N.** course past the mouth of Merrymeeting Bay to Abagadusset Point, which is low, with a somewhat steep face, and for the most part cleared and cultivated. This point is the southeastern extremity of a large and fertile peninsula on the northern side of Merrymeeting Bay and the eastern side of the Kennebec River. Abagadusset River separates it from the mainland to the westward. The river is here not quite three-eighths of a mile wide, but there is a good channel with from three to five fathoms at low water. **Abagadusset Point.**

Above Abagadusset Point the river is somewhat wider, and has a general course about **N NE.** for a mile and a half to Swan's Island, which occupies the middle of the stream for a distance of three miles, dividing it into two narrow channels. The island is three miles long, with an average width of half a mile; lies **NE.** by **N.** and **SW.** by **S.**; and shows at its southern end a somewhat steep face about twenty feet high, behind which the land rises to a hundred and forty feet. This southern end shows cleared fields backed by thick woods. The western shore of the island is also mostly wooded, but the eastern side is in most places cleared and cultivated. The main channel of the river runs to the eastward of the island, and not less than ten feet at low water may be taken above Richmond. Seven feet is the best that can be carried up to Richmond through the western channel. **Swan's Island.**

Western Branch, which leads to Richmond, is very narrow, having an average width of an eighth of a mile, while at the village it is only about one hundred and twenty yards wide. It enters between **Swan's Island Point** (the southern extremity of Swan's Island) on the north and **Maxwell's Point,** a steep bluff point of the mainland, on the south. Maxwell's Point is about one mile above Abagadusset Point. From its entrance Western Branch has a general course **NE.** by **N.** for about three miles and a quarter to the village of **Richmond,** built on its western bank. The western banks are undulating, but in general show steep faces about twenty feet high, behind which cleared and cultivated lands rise gradually to heights varying from forty to one hundred and twenty feet. The northwestern end of Swan's Island shows a steep bluff eighty feet high, and cleared opposite the village. Only seven feet at mean low water can be carried up to Richmond through this channel, as there are bars with from seven to nine feet on them at intervals along its course The shoalest bar is about half a mile below the village, and a little above **Hatch's Rocks,** and has seven feet on it. **Western Branch.**

Eastern Branch runs between Swan's Island Point and **Hathorne's Point,** on the eastern bank of the Kennebec. Its general course is about **NE.** by **N.** for a little over two miles to The Narrows, which are formed by **Little Swan's Island,** lying along the eastern shore of Swan's Island, a little over a mile below its northern end. This island is wooded except on its summit, which is forty feet high, cleared, cultivated and has a group of houses on it. Through the narrow channel between the two islands ten feet can be carried, and not less than three fathoms through The Narrows. At **The Narrows** the channel turns abruptly to the westward, running nearly **NW.** for about a quarter of a mile through a narrow and intricate channel obstructed by bare rocks and sunken ledges. Through this channel the least water is three fathoms. At its western end it turns abruptly about **NE.** by **N.** for three-quarters of a mile, and unites with the Western Branch at the northern end of Swan's Island. **Eastern Branch.**

From Swan's Island the river continues to the northward, with courses varying from **N NW.** to **NE.** for nine miles, to **Gardiner,** which is also situated on the western bank. Its width varies; but, except near the ice-houses, its average breadth may be taken as four hundred yards. Just above and below the ice-houses it widens out to three-eighths of a mile; but at Gardiner it is only two hundred yards wide. Ten feet may be carried up to Gardiner,—the channel being obstructed by a bar just below **Naumkeag Island** and about five miles above Swan's Island. This bar, over which ten feet can be taken, having been passed, there is not less than two fathoms to Gardiner.

Eastern River is the name of a branch which makes in to the northeastward from the Kennebec River, a little above Hathorne's Point, on the Eastern Branch. It flows through a narrow and crooked channel in a northeasterly direction, with a width of about one hundred and fifty yards; and six feet can be carried up it to the second bridge, four miles above its mouth. **Eastern River.**

The shores of the Kennebec above Swan's Island are almost all cleared and under cultivation,—small groves extending like spurs at intervals between the cleared fields. The land varies in height from twenty to one hundred and forty feet, and in general has a very gradual rise. The village of **Hallowell** is on the western bank, about five miles above Gardiner; and **Augusta** is also situated on the western bank of the river, about seven miles above Gardiner and about twenty-seven miles above Bath. There is an immense lumber trade on this river, in which all of the towns on its banks are greatly interested.

DANGERS

IN APPROACHING AND ENTERING KENNEBEC RIVER.

I. ***Coming from the Eastward and proceeding up to Bath.***—The first danger met with in approaching the Kennebec is Bantam Rock, or *The Bantam*, which is bare at low water, lies **SW.** by **S.** ¼ **S.** from Damiscove Point, one and a half miles distant, and is marked by an iron nun-buoy (No. 2.) of the second class, painted red. The buoy is in good water about one hundred yards **SW.** from the rock. (See page 382.)

Bantam Rock.

Tom's Rock lies **W.** by **N.** ¼ **N.** from The Bantam, four miles distant, and is a very dangerous sunken ledge, (see page 383,) as it is directly in the way of vessels bound into the Kennebec from the eastward, and has only nine feet at low water. A red spar-buoy, marked No. 2, is placed in deep water on the southwestern side of the ledge. This rock bears **NE.** by **E.** ¾ **E.** from Seguin Light-house, distant two miles and three-eighths; from Griffith's Head **S.** ¾ **W.**, distant three miles; and from Cape Newagen **SW.** ½ **W.**, nearly four miles distant.

Tom's Rock.

After passing Tom's Rock, the next obstruction met with lies on the western side of the channel, and is called White's Ledge. It has eight feet at low water, and lies **NE.** by **N.** from the northern end of Seguin Island, one mile distant, and **W.** ½ **N.** from Tom's Rock, one mile and a half distant. A black spar-buoy (No. 1), with the letters "W. L." painted in white upon it, is placed about fifty feet to the eastward of the eastern point of the ledge.

White's Ledge.

Passing White's Ledge, the course leads clear of all obstructions until nearly up with Pond Island, when you must avoid The Whale's Back, on the northeastern side of the channel, two hundred and eighty yards **S SW.** from Salter's Island. The Whale's Back is an islet two hundred yards long and one hundred broad, and in thick weather is very dangerous. There is a passage between it and Salter's Island, but it is narrow, crooked and unsafe. The rock may be approached quite closely in clear weather, on the Kennebec side, with not less than four fathoms water.

The Whale's Back.

Four Fathom Rock, dangerous only in heavy weather, is the next obstruction. It lies almost exactly in mid-channel, between the northern point of Pond Island and The Whale's Back; and from Stage Island it bears nearly **S.**, a quarter of a mile distant, and from Pond Island Light-house **E.** ⅜ **N.**, a quarter of a mile. Four fathoms at mean low water are found on this ledge, and it is not buoyed.

After passing Pond Island there will be seen ahead, nearly in mid-river, two bare rocky islets surrounded by shoals, called The Sugar Loaves. The southern one, called **South Sugar Loaf**, is in mid-channel, a quarter of a mile to the eastward of Hunniwell's Beach, and about the same distance to the westward of Stage Island. It is surrounded by shoal water, and, as the flood sets strongly on it, it should be carefully avoided. Three hundred and fifty yards **NW.** from it is the **North Sugar Loaf**, another small bare rock, about one hundred and fifty yards in diameter and nearly round. Ebb tide sets upon it, and it is surrounded by shoal water. There is a deep passage, however, with four and a half fathoms, between the two rocks. North Sugar Loaf should receive a berth to the eastward, from vessels passing to the westward of it, of at least one hundred yards; while those passing to the eastward of it should not approach it nearer than seventy-five yards. South Sugar Loaf should receive a berth to the eastward of seventy-five yards; and those passing on the eastern side of it should give it a berth of one hundred and fifty yards; for between seventy-five and eighty yards to the eastward of the northern end of the rock is a dangerous ledge, known as Black-Jack Rock, or simply *Jack's Rock*. It is bare at low water, and was formerly marked by an iron spindle with a cage on top. This spindle has been replaced by a wooden spar, surmounting the rock, which is only dangerous to vessels passing to the eastward of The Sugar Loaves.

The Sugar Loaves.

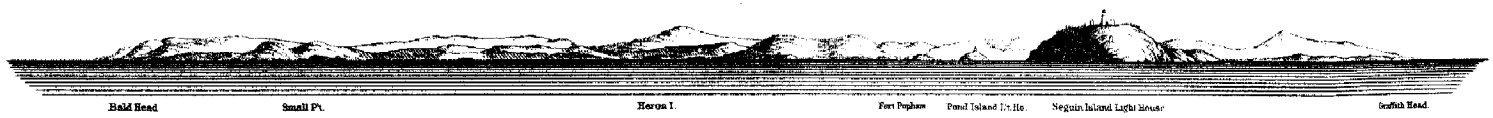
Black-Jack Rock.

Fifteen Feet Spot is also in the way of vessels passing on the eastern side of The Sugar Loaves. It bears **N.** by **E.** ½ **E.** from the South Sugar Loaf, and is distant from it one hundred and fifty yards. After passing The Sugar Loaves give Hunniwell's Beach a berth of one hundred and fifty yards, and there are no more dangers until you are past Fort Popham.

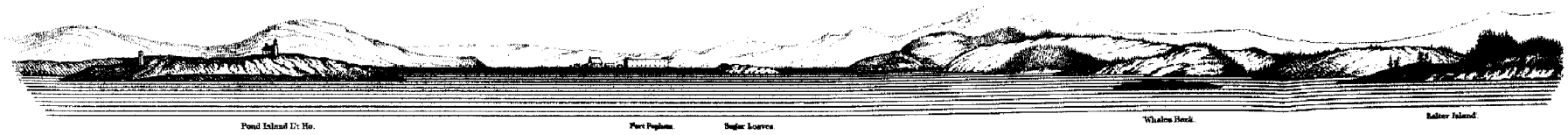
The flats of Atkins' Bay, which make out almost to the line of Cox's Head and Hunniwell's Point, nearly always show themselves by discolored water. They are easily avoided, however, by not going inside the line of Cox's Head and Fort Popham.

Shag Rock. After passing Gilbert's Head, and when nearly up with Cox's Head, a bare rock surrounded by shoal water is reached, lying about one hundred and fifty yards off the Long Island shore, and called Shag Rock. It is not buoyed, but a buoy or spindle has been recommended to be placed upon it.

After passing Shag Rock the channel is clear on approaching Perkins' Island,—the edges of the channel being plainly marked at low water by the flats between Parker's Head and Cox's Head on the west and between Marr's Island and Long Island on the east. These flats are almost always distinguishable from the deep water by the color of the water upon them. To avoid them, when they do not show themselves, vessels must not, when standing to the eastward, go inside of the range of Bald Head and Perkins' Island; and when standing to the westward, must go about when in line between Dix Island and Parker's Head.



Approaches to the Kennebec and Sheepscot Rivers from the SE. and W^d., Seguin I. Lt. Ho bearing N. by E. ½ E. distant 3 Miles



Entrance to Kennebec River, Pond Island Light bearing N. W. ½ W. distant 1 Mile.

When up with Dix Island, a spar-buoy will be seen about half a mile ahead. This buoy marks *Perkins' Island South Ledge*, or Perkins' Island Ledge, as it is sometimes called. This ledge is a quarter of a mile **S SW.** from Perkins' Island, nearly four hundred yards **W.** from the middle of Marr's Island, and one mile **N.** from Shag Rock. It is a detached rock, with eleven feet at mean low water and nine feet at low spring tides, with five fathoms water on all sides of it. The buoy, which is painted red and black in horizontal stripes, is placed on the southern point of the rock; and it is customary in going up river to leave this buoy to the eastward.

Perkins' Island Ledge.

Three-eighths of a mile to the northward of Perkins' Island South Ledge, and exactly opposite to the middle of Perkins' Island, is another ledge exactly in the middle of the river. This is Perkins' Island North Ledge, and has seven feet at mean low water. It is marked by a black spar-buoy (No. 1) placed on the southeastern side of the rock. The best channel is between this buoy and Perkins' Island, although, as the rock is detached and has six fathoms water on all sides of it, vessels sometimes go between it and Parker's Head. This ledge is sometimes known as *Parker's Ledge*.

Perkins' Island North Ledge.

Parker's Flats extend off from the western bank of the river, between Parker's Head and Weasel Point. Vessels of over ten feet draught should not approach the western shore between these two points nearer than three hundred and seventy-five yards until you are near Weasel Point, when a spindle with cylinder on top will be seen placed about one hundred yards off the shore and about four hundred yards below Weasel Point. You may go close to this spindle, and above it the shore may be safely approached within one hundred yards until up with Weasel Point. This spindle, which is painted black, is on Seal Rocks, two rocks almost always bare, lying about one hundred yards from the western shore, one mile and a quarter above Parker's Head, and a quarter of a mile below Weasel Point. Bald Head is almost exactly opposite.

Parker's Flats.

Seal Rocks.

On the eastern shore, after passing Perkins' Island, vessels must not go inside of the line from the northern point of Marr's Island to the southern point of Bald Head; and when up with the head, they must not go inside of the line from it to Squirrel Point. Thus the flats which make off from Georgetown Island, the mouth of Back River and the southern shore of Arrowsic Island will be avoided. Squirrel Point is, however, tolerably bold.

Above Weasel Point, give the western shore a berth of one hundred and fifty yards until you are near Goat Island. Here take care to avoid a bad rock, called Goat Island Rock, which lies one hundred and fifty yards to the southward of Goat Island, is bare at low water, and forms the southern extremity of the line of ledges and shoals which make off from the southern end of Lee's Island to a distance of three-eighths of a mile. Goat Island Rock is not buoyed.

Goat Island Rock.

When up with Goat Island, a black buoy will be seen near the shore of Lee's Island. This is on Lee's Island Rock, awash at mean low water, lying between eighty and ninety yards from the shore, near the southern end of the island. There are five fathoms water close up to the buoy, which is marked No. 3, and placed **SE.** from the rock. Lee's Island Rock is not connected with the shore, as there is good water between it and the island; but the passage, however, is too narrow to be of use.

Lee's Island Rock.

Between Lee's Island and the eastern shore of the river, and as far up as Green Point, we find the middle of the river occupied by a line of marshy and rocky islets. The northernmost and largest of these islets is called **Ram Island**, (see page 395,) and the others are known as Pettis' Rocks. They lie **N NE.** and **S SW.**; and Pettis' Rocks extend a quarter of a mile in the same direction, leaving a narrow channel between their northern end and Ram Island. This island is also surrounded by shoal water; and **N.** from its northern point, one hundred and twenty-five yards distant, lies a rock called *Ram Island Rock*, which is bare at one-quarter ebb. This rock may be left on either hand, but it is customary to leave it to the eastward.

Pettis' Rocks.

After passing Ram Island Rock the channel is clear, and it is only necessary, between Green Point and Bluff Head, to give the Arrowsic shore a good berth,—say of two hundred yards; but the shoal is gradual and the lead will inform you when it is time to go about. Above Bluff Head there are no obstructions and the shores are bold-to until you are past Morse's Cove, when beware of Lithgow's Rock, which has eight feet at mean low water. It lies nearly in the middle of the river, just above the northern point of Morse's Cove, and is marked by a black spar-buoy (No. 5) placed on its southern point. It may be passed on either hand, but it is usual to pass to the eastward of it.

Lithgow's Rock.

After passing through Fiddler's Reach, give Doubling Point a berth of one hundred and fifty yards to avoid *a long spit* which makes out from it; and, on the western side of the river, beware of *Hospital Point Rock*, lying about two hundred yards **SE.** from Hospital Point, with five feet at low tides upon it. It is marked by a black spar-buoy (No. 7) placed in four fathoms off the southeastern edge of the shoal. When past it there is nothing in the way until you are up to Lincoln's Ledge, lying nearly in mid-river, off the lower end of the

Lincoln's Ledge.

city of Bath. It has four feet at mean low water, and is marked by a black spar-buoy (No. 9) placed on its eastern side There is five fathoms inside of it, between the rock and the line of wharves.

Six hundred and fifty yards above Lincoln's Ledge, and close in with the shore, a group of ledges, some always bare and some bare at low water, lie off the southern end of **Trufant's Wharf**, and are known as Trufant's Ledges. They are marked by a black spar-buoy (No. 11) placed in two fathoms on the eastern side. On **Trufant's Point** there is a steam saw-mill and ship-yard, which will serve to prevent a stranger from mistaking these ledges for Lincoln's Ledge.

Trufant's Ledges.

Above Trufant's Ledges the river is clear for one mile and three-quarters, when a mass of shoals, occupying two-thirds of the width of the river, is reached,—some of them dry at low water, others with from six to eighteen feet on them at low tide. These are Winslow's Rocks. A red spar-buoy (No. 2) is placed near the dry ledge, which you must leave to the westward bound up with a fair wind, and give it a berth of at least two hundred yards. The deepest channel, which has ten fathoms, here runs close along the eastern shore of the river, which is quite bold-to, and vessels need only keep this shore close aboard to avoid all of the shoals of Winslow's Rocks. Vessels of not over twelve feet draught may leave the buoy to the eastward, and will not have less than sixteen feet at mean low water; and this is the channel commonly used, especially on the flood-tide. But heavy-draught vessels with a fair wind should keep the eastern shore aboard.

Winslow's Rocks.

Half a mile above the buoy on Winslow's Rocks lie three bad rocks nearly in mid-river, called Stetson's Rocks, and marked by a red spar-buoy (No. 4) placed on the shoal in eleven feet water. The southern rock is always awash; the northern one is bare at low spring tides; while the western rock has six feet at mean low water. The widest channel is to the westward of them, so the buoy is usually left to the eastward; but with a fair wind it is perfectly safe to go to the eastward, as simply keeping the Woolwich shore close aboard clears all danger, in ten fathoms water.

Stetson's Rocks.

From Stetson's Rocks to **The Narrows** there are no dangers; but on passing through The Narrows a long ledge will be encountered making off from Lines' Island nearly to Telegraph Point, and called Thorne's Island Ledge. In some places it is nearly bare, and from Lines' Island to its southern end it is half a mile in length. Its general direction is **NW.** and **SE.**

Thorne's Island Ledge.

Strangers must not attempt the passage of the East Branch, as the Burnt Jacket Channel at its northern end is much obstructed and dangerous for those unacquainted with the currents and the locality of the ledges.

In passing through the West Branch a black spar-buoy (No. 13) will be seen close in with Wood Island. This buoy is in ten feet at low water, and marks the shoals making off from that island. When past it there are no obstructions until you are nearly abreast of the middle of Lines' Island. Here lies *a group of bare rocks* about a quarter of a mile from the western shore. They always show themselves, and to avoid them it is only necessary to keep close to the shore of Lines' Island. To the westward of these rocks the water is shoal and the bottom rocky and broken.

Three hundred yards **N.** of Lines' Island lies a detached rock, bare at low water, called Grace's Rock. A red spar-buoy (No. 6) is placed on its western edge in nine feet at mean low water.

Grace's Rock.

After passing Grace's Rock steer gradually over to the eastern shore, so as to give the eastern side of Chops Point a berth of at least two hundred and fifty yards, to avoid *a shoal with ten feet at low spring tides* which makes off from the eastern side of the point in a southerly direction. When The Chops are fairly open this danger is passed and you may steer through them,—the passage being entirely unobstructed and both shores very bold-to.

The eastern shore of the river, from Lines' Island to the northern point of The Chops entrance, is also somewhat obstructed. Ledges and shoals lie off the Woolwich shore, and it should not be approached nearer than two hundred and fifty yards. At the northern point of The Chops it is, however, quite bold-to.

After passing through The Chops the channel leads to the northeastward, keeping the eastern shore aboard. Three-eighths of a mile above the northern point of The Chops there is a spar-buoy (No. 8), painted red, marking Trott's Rock, which has five feet at mean low water. The usual course is to leave the buoy to the eastward; but vessels may go to the eastward of the ledge by keeping the eastern shore of the river close aboard.

Trott's Rock.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING KENNEBEC RIVER.

I. ***Coming from the Eastward and proceeding up to Bath.***—When off the mouth of Sheepscot River, in thirty-five fathoms, with Hendrick's Head Light-house bearing **N.** by **E.** ½ **E.** and Seguin Light-house **W.**, two and three-quarter miles distant, bring Pond Island Light-house to bear **NW.** by

W. and steer for it, carrying not less than six fathoms water, until the flag-staff on the Ocean House at Hunniwell's Point bears NW. by N. ¼ N. When about a quarter of a mile from Pond Island, in six and a half fathoms, steer NW. by N., carrying not less than eight fathoms, until you are abreast of the southern end of South Sugar Loaf, which leave two hundred and fifty yards to the eastward, and steer N. by W. ¼ W. for the bare summit of Cox's Head; and when abreast of the northern angle of Port Popham, *if desiring an anchorage, steer into Atkins' Bay,* (rounding the point close-to,) and anchor in from three to nine fathoms, soft muddy bottom. On this last course not less than five and a half fathoms can be carried. There is a Government mooring-buoy here, which marks the most sheltered anchorage; but as a general rule, however, do not anchor inside of a line drawn from Sabino to Cox's Head, as the flats make off nearly to that line. The bottom is, however, soft, and no harm will happen to vessels which may take ground upon the flats. This anchorage, except at the mooring-buoy, is uncomfortable and somewhat dangerous, owing to the whirls caused by the rapid currents in this vicinity. Vessels are not advised to anchor here, but if desiring anchorage should run up to Parker's Flats before coming to.

Sailing Directions---Kennebec River.

But, if bound up to Bath, continue the course N. by W. ¼ W. until you are just past the northern end of Hunniwell's Point and in about seven fathoms, when steer N. ½ E., which will bring you up, with not less than seven fathoms water, to the red and black buoy on Perkins' Island South Ledge. Leave this to the eastward close-to, and steer N. by E. Easterly for Bald Head, carrying not less than six fathoms, and leaving the black buoy on Perkins' North Ledge to the westward. When off the mouth of Back River, with Squirrel Point bearing N. by W. ½ W. and Crow Islands NE. by N., steer N NW. nearly, with not less than four fathoms, until past the latter point. When abreast of Phipsburg Centre, *and if bound into Drummore Bay,* continue the course N NW., leaving Goat Island to the eastward until that island bears N NE. *But, if bound to Bath,* when past Squirrel Point steer NE. by N. ¾ N. for Bluff Head, leaving Goat Island Rock and Lee's Island Rock to the westward and Pettis' Rocks and Ram Island Rock to the eastward, and carrying not less than six fathoms water. When abreast of Ram Island Rock haul a little over towards the eastern shore if the tide be flood, to avoid being set on to Indian Point. When up with Bluff Head, keep the middle of the river, in from fourteen to twenty fathoms water, until up with Morse's Cove, when the eastern or western shore should be kept aboard, according to tide, to avoid Lithgow's Rock. Fiddler's Reach cannot be passed without a good fair tide or a very strong fair wind, but there are no obstructions in the reach and it has fourteen fathoms water. Give Doubling Point a good berth, (say two hundred yards,) and then keep the middle of the river, only avoiding Lincoln's Ledge and Trufant's Ledges, (which are marked by buoys,) and anchor at discretion off the town, in from five to seven fathoms, good holding-ground.

The above courses must be made good, and it will be necessary to alter them according to tide.

Above Bath strangers must not go without a pilot; and no intelligible sailing directions can be given for either Richmond, Gardiner or Augusta.

DANGERS

IN APPROACHING AND ENTERING KENNEBEC RIVER.

II. ***Coming from the Southward and Westward.***—In approaching the Kennebec *from the southward* there is nothing in the way but Mile Ledge, which is situated nearly one mile S. ½ W. from Seguin Light-house and three-quarters of a mile from the southern point of the island. It has eighteen feet at mean low water, and is marked by an iron can-buoy of the second class, painted in red and black horizontal stripes, and placed in seven fathoms water about one hundred yards S. from the ledge. In heavy southerly or easterly weather the sea breaks on this ledge with great violence.

Mile Ledge.

Coming from the westward, however, when you are near Cape Small Point there will be seen ahead a ledge breaking heavily. This is Bald Head Ledge, which lies off the bare head (so called) just to the westward of Cape Small Point. It is bare at half-tide, and is three-eighths of a mile S. by W. ¼ W. from Bald Head, and W. ¼ N., three-quarters of a mile, from Cape Small Point. The range for clearing it is to keep Seguin Light-house open to the southward of Fuller's or Glover's Rock; or, if going to the northward of Glover's Rock, and between the ledge and Bald Head, do not go to the southward of Seguin Light-house, seen over the southern end of Small Point. This is a very dangerous ledge, and always breaks, even in the calmest weather; and it lies exactly in the track of vessels bound either way past Small Point,—as nearly all pass to the northward of Glover's Rock.

Bald Head Ledge.

Passing Bald Head Ledge the next danger is Bill Wallace's Ground, an area of shoal ground with a pinnacle rock upon it, which has seventeen feet at low water. This rock is very small and has no buoy. The bearings for the shoalest water are Seguin Light-house, over the southern point of Fuller's or Glover's Rock, and Bald Head Ledge and Mark Island in range. On this range one cast of seventeen feet is obtained. Heavy-draught vessels must avoid this rock by keeping Seguin Light-house open to the southward of Glover's Rock.

Bill Wallace's Ground.

Vessels using the channel between Cape Small Point and Glover's Rock must beware of The Button-Moulds, two sunken ledges with ten and sixteen feet respectively, lying in mid-channel a little to the westward of a line drawn from Cape Small Point to Glover's Rock. They bear as follows: From Glover's Rock **NW.** ½ **W.**, distant nearly a quarter of a mile; from Bald Head **SE.** ½ **E.**, distant three-quarters of a mile; from the summit of Cape Small Point **SW.** by **S.** ¼ **S.**, distant nearly a quarter of a mile. They are not buoyed; and to avoid them keep the Small Point shore aboard, or do not go to the southward of Seguin Island Light-house bearing **E.** ⅛ **S.**

The Button-Moulds.

Glover's Rock is a bare rocky islet, known by the above name to the residents of Cape Small Point and vicinity, but called **Fuller's Rock** on the chart. It lies a little over a quarter of a mile **S.** from Cape Small Point; and between the two is a good channel with from three to ten fathoms, very much used by coasting vessels bound either to the eastward or westward. Glover's Rock is tolerably bold-to on its northern and eastern sides, but on its southern and western sides it is shoal and must not be approached too closely.

Glover's Rock.

Five-eighths of a mile **E.** by **N.** from Glover's Rock lie three sunken ledges, dangerous only in heavy weather and to heavy-draught vessels. Twenty-two feet at lowest tides is the least water upon them, and they are not buoyed, but are known as Halibut Rocks. The schooner "Yankee Girl" was capsized by the breakers on the most northerly ledge some years ago, and all hands lost.

Halibut Rocks.

Bold Dick lies close to the main shore, and is only dangerous to vessels beating up on their inshore tack. It is a bare rock, (with shoal water extending some distance to the eastward,) lying a little over half a mile from the beach, between Morse's and Sprague's rivers, one mile and a third **NE.** ¾ **E.** from Cape Small Point, and half a mile **W.** ¼ **S.** from the southern point of Heron Island. A quarter of a mile **E.** from it lies *a rock awash at low water*, which has no name.

Bold Dick.

Heron Island is, in reality, three islands, bare and rocky, which lie in a **N.** and **S.** direction about half a mile off the mouth of Morse's River. On their eastern side they are quite bold-to; but a bare rock and *a rock awash at low water* lie off the southern point of the southernmost islet, at a distance of seventy-five and one hundred and fifty yards, respectively. These rocks are only dangerous to vessels beating to the eastward or westward.

Heron Island.

Passing Heron Island, no obstructions are met with until you are up with Jack-Knife Ledge. This very dangerous rock (see page 388) has eight feet at mean low water, and is marked by a black spar-buoy with the letters "J. K. L." painted upon it in white. This buoy, in summer, is replaced by a black can-buoy, also marked with the letters "J. K. L." It is placed about twenty-five yards **S.** from the ledge. Jack-Knife Ledge bears **NW.** by **N.** from Seguin Light-house, one mile and a quarter distant; from Pond Island Light-house **SW.** by **S.**, one mile and a quarter nearly; from Cape Small Point **E.** by **N.** ¼ **N.**, two miles and three-quarters; and from the easternmost of the Fox Islands **SE.** by **S.** ¾ **S.**, three-quarters of a mile distant. There is a channel with five fathoms water to the northward of this ledge, between it and the Fox Islands; but it is not available for strangers.

Jack-Knife Ledge.

The buoy on Jack-Knife Ledge often goes adrift, owing to the heavy sea and insecure holding-ground. Vessels should carefully watch the bearings given above to avoid being set on the ledge.

The Fox Islands are a group of rocky islets, one of them thinly wooded, which lie off Morse's Point at the southern extremity of Hunniwell's Beach, about three hundred yards from shore; and at low water a bare sand-spit connects them with the beach. They are surrounded by shoal water and it is not safe to approach them closely. The easternmost of the group, which is the largest, bears **W.** by **S.** ½ **S.** from Wood Island, (with Pond Island Light-house in range,) and is five-eighths of a mile distant from the former.

Fox Islands.

From the Fox Islands eastward to Pond Island the coast is very shoal,—a very extensive bar or shoal of hard sand making off from Hunniwell's Beach to the southeastward for one mile, and to the eastward as far as the eastern side of Pond Island. This is called Pond Island Bar, and is a very dangerous shoal, as its exposed position causes the sea in southerly gales to break heavily upon it in three and a half fathoms; but there are many spots upon it with only four and five feet at low water, and a wide berth should be given to it even in moderate weather. This shoal is marked by an iron can-buoy of the second class, painted black and marked No. 3; and it is not safe except in very moderate weather, and with light-draught vessels, to go between this buoy and Pond Island. There is a very narrow channel between Pond Island and Wood Island with seventeen feet at low water; but it is too dangerous for strangers.

Pond Island Bar.

On approaching the Kennebec from the westward a bare rocky islet will be seen off the northern point of Seguin, called Ellingwood's Rock. It lies four hundred yards **N.** ¾ **E.** from the northern point of Seguin and one mile **SE.** by **E.** ¼ **E.** from Jack-Knife Ledge. Its northern face is bold-to and may be approached quite closely with safety. Half a mile **NE.** from it lies a group of bare rocks, called *Seguin Ledges*, on the southeastern side of the channel, and surrounded by a shoal with rocky bottom. They are one mile **E.** by **S.** from Jack-Knife Ledge and one thousand yards **NE.** by **E.** from Seguin Island; and, being always bare, they are not buoyed. Vessels should give the bare rocks a berth to the eastward of about three hundred yards. ***Ellingwood's Rock.***

White's Ledge lies one-third of a mile **NE.** from Seguin Ledges and one mile **NE.** by **N.** from Seguin Island. It has eight feet at low water, and is marked by a black spar-buoy (No. 1) with the letters "W. L." painted in white upon it, and placed about fifty feet to the eastward of the eastern point of the ledge. ***White's Ledge.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING KENNEBEC RIVER.

II. ***Coming from the Southward, or from Sea.***—Bring Seguin Light-house to bear **NE.** by **N.** ¼ **N.**, three miles distant, and steer **N NE.**, carrying not less than four fathoms water, and passing one-third of a mile to the westward of Seguin Island, a quarter of a mile to the westward of Ellingwood's Rock, five-eighths of a mile to the eastward of Jack-Knife Ledge, one third of a mile to the westward of Seguin Ledges, three hundred and fifty yards to the eastward of the buoy on Pond Island Bar, and half a mile to the westward of White's Ledge. Continue this course until you are past Pond Island Bar buoy and Pond Island Light-house bears **N NW.**; when steer **N.** ½ **E.** for Stage Island, (having Seguin Light-house nearly astern,) and carrying from four to six fathoms. On this course continue for about three-eighths of a mile, or until Pond Island Light-house bears **NW.** by **W.** and the flag-staff on the Ocean House **NW.** by **N.** ¼ **N.**; when steer **NW.** by **N.** until you are abreast of the southern end of South Sugar Loaf, and proceed as directed on page 401.

But, coming from the Westward, along shore, the course from Portland Head for Half-way Rock is **E.** This course continue until you are up with Cape Small Point, which leave one mile to the northward, and there will be fifteen fathoms. When Glover's Rock and the cape are in range, steer **NE.** by **E.** ½ **E.**, carrying not less than four fathoms, and leaving Jack-Knife Ledge buoy a little over four hundred yards to the northwestward and Pond Island Bar buoy four hundred yards in the same direction. When past this latter buoy, with Pond Island Light-house bearing **N.** by **W.** ½ **W.** and Stage Island **N.** ½ **E.**, with four and a half fathoms, steer **N.** ½ **E.** until Pond Island Light-house bears **NW.** by **W.** and the flag-staff on the Ocean House **NW.** by **N.** ¼ **N.** On this course there is not less than four fathoms. Now steer **NW.** by **N.** until you are abreast of South Sugar Loaf, when proceed as directed on page 401.

III. ***Coming from the Westward, Outside of everything.***—When off Cape Elizabeth, with the lights bearing **N NW.**, three and a half miles distant, the course for Seguin Light-house is **E.** by **N.** ¼ **N.** This course leads a mile and a quarter to the southward of Small Point; and when the point and Glover's Rock are in range, steer **NE.** by **E.** ¼ **E.**, carrying not less than four fathoms water, until Pond Island Light-house bears **N.** by **W.** ½ **W.**, with five fathoms water, when steer **N.** ½ **E.** for Stage Island; *or*, continue the course **E.** by **N.** ¼ **N.** until Pond Island Light-house bears **N.** by **E.** and the southern end of Seguin Island **E.** ¼ **S.**, with fifteen fathoms water. Now steer **N NE.**, carrying not less than four fathoms, until Pond Island Light-house bears **N NW.**, with four and a half fathoms, when steer **N.** ½ **E.** for Stage Island, and proceed as before directed.

To pass inside of Glover's Rock and enter the Kennebec River.—From Half-way Rock steer **E.** ⅛ **N.**, nearly for Cape Small Point. Give Bald Head a berth of five-eighths of a mile, which will leave Bald Head Ledge, between three and four hundred yards to the northward. Leave Cape Small Point about two hundred yards to the northward, and Glover's Rock three hundred and fifty yards to the southward. Keep the Small Point Shore aboard to avoid The Button-Moulds, which lie nearly in the middle of the passage between Small Point and Glover's Rock. After passing Cape Small Point, continue the course **E.** ⅛ **N.** for the northern end of Ellingwood's Rock, in range with Damiscove Point; and on this course there will be nothing less than nine fathoms water. Continue it until Pond

Sailing Directions--Kennebec River. Island Light-house bears **NE.** ½ **N.** and Seguin Light-house **E.** by **S.** ¾ **S.**, when steer **NE.** by **E.** ½ **E.**, carrying not less than four fathoms, until Pond Island Light-house bears **N.** by **W.** ½ **W.**, with five fathoms; when steer **N.** ½ **E.** for Salter's Island, and proceed as before directed.

In beating up from the westward, when near Bald Head, do not stand to the northward of Seguin Light-house in range with Glover's Rock on an **E.** bearing. This will avoid Bald Head Ledge and Bill Wallace's Ground.

When to the eastward of the range of Glover's Rock and Cape Small Point, and there is a heavy sea on, do not stand to the northward of Seguin Light-house bearing **E.** ¼ **N.**, thus avoiding the innermost Halibut Rock, which has four fathoms on it at low water, and on which the sea breaks in heavy weather.

When near Jack-Knife Ledge do not go inside of the bearing of Pond Island Light-house **NE.** by **N.** ½ **N.**, which will lead clear of the ledge. Remember that the flood-tide sets strongly upon it, and shape your courses accordingly.

Remember, also, that the current of both flood and ebb tides set strongly upon The Sugar Loaves, and that the current of ebb has, at this point, a maximum velocity of at least three miles an hour.

There are always pilots to be had at Hunniwell's Point, or at Gilbert's Head on Long Island; and strangers bound up the river should always take a pilot, as the narrow limits of the channel, the consequent strong tidal currents, and the many obstructions in the middle of the river render it somewhat difficult, especially in light winds, for inexperienced persons to keep vessels off the rocks.

With a fair tide, if caught by a calm in Fiddler's Reach, (a not unfrequent occurrence,) you should tow through with a boat, simply taking care to keep off the banks on either side. With a head-tide, unless the wind is strong and nearly aft, vessels must not attempt to pass the reach, but must anchor in Morse's Cove. There are no obstructions in the entrance to this cove or in the cove itself, and you may stand in for the shore and anchor at pleasure in from four to six fathoms. Near the mouth of the Kennebec, vessels caught by a head-tide or a calm make an anchorage in Stage Island Bay, which embraces all of that sheet of water between Salter's and Stage islands. There is good holding-ground, with soft bottom, in from three to five fathoms, and no obstructions in the way except Four Fathom Rock. (See page 398.)

LIGHT-HOUSES.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Pond Island Light-house	43 44 23	69 46 14	4 39 4.9	Fixed.	54	13
Seguin Light-house	43 42 25	69 45 31	4 39 2.1	Fixed.	180	20

TIDES.

	Bath.	Hunniwell's Point.
Corrected Establishment	12h 13m	11h 15m
Mean Rise and Fall of tides	6.1 ft.	8.1 ft.
Mean Rise and Fall of Spring tides	6.5 ft.	8.9 ft.
Mean Rise and Fall of Neap tides	5.5 ft.	7.4 ft.
Mean duration of Rise	5h 54m	6h 16m
Mean duration of Fall	6h 29m	6h 11m
Rise of highest tide observed	7.9 ft.	9.9 ft.

CURRENTS.

The velocity of the current of ebb in the Kennebec River is considerable, especially in the narrower parts of the stream, as, for instance, near The Sugar Loaves, at Hunniwell's Point, and from Bluff Head to Doubling Point. The large volume of water which must have egress, confined between narrow walls, hurries towards the sea with a velocity only increased by the natural fall of the bed of the river, and renders this stream one of the most dangerous on the whole coast for strangers to navigate. No complete observations of currents have as yet been made here, and the actual velocity and direction of the tidal currents are not accurately known. Of the ebb the maximum velocity is about three knots, of the flood about two. The direction of the current depends on the course of the river, and near the mouth is influenced somewhat by strong winds, especially easterly gales. The effect of the currents upon the courses of vessels is sufficiently great to give point to the warning given above to strangers to take a pilot whenever possible to get one.

VARIATION OF THE COMPASS.

The magnetic variation at the mouth of the Kennebec River for 1879 is 13° 55′ W., with an annual increase of about 2½′. At Bath the variation for the same year is about 13° 30′ W.

ICE IN KENNEBEC RIVER.

During ordinary winters this river is usually closed, above Bath, from early in December to the first of April; but during severe winters, like that of 1874–75, it is closed to all navigation from the middle of November to the middle of April. Below Bath the river has not been closed by local formations since January, 1857, when it was obstructed for about three weeks as far down as Fiddler's Reach. In the winter of 1874–75 steamers could have entered the river and proceeded up as far as Bath, except during three days in the middle of February, when large masses of drift-ice lodged in Fiddler's Reach,—forming an impassable barrier. Usually sailing vessels could enter by taking advantage of the flood tide; but it was not safe to anchor in the river during the ebb tide, as they would have been in constant danger of serious injury from the large quantities of drift-ice brought down by that tide.

Formations at and below Bath are rarely sufficiently heavy to obstruct navigation,—the massing of the floes being prevented by the constant movements of powerful ferry-boats, which transport the trains of the Knox and Lincoln Railroad across the river at Bath; and any large formations of drift-ice brought down by the tide are broken into small pieces.

Ice forms more rapidly during westerly winds. Northerly winds assist the current of ebb in carrying drift-ice out of the river and oppose the influence of the current of flood in bringing it back again. The current of ebb is rapid enough to prevent heavy local formations and to carry drift-ice to sea,—the most favorable period for extensive local formations being at low water slack. The buoys are rarely displaced by the ice during the winter.

SASANOA RIVER.

This river connects the Kennebec and Sheepscot rivers. It takes its origin in the Kennebec River opposite the city of Bath, and flows through a very eccentric, crooked and dangerous channel, for a distance of about seven miles, into the Sheepscot River. In the narrowest part of the channel the tidal current attains the extraordinary velocity of thirteen nautical miles an hour. Many ledges and rocks obstruct the passage of this river, and it is not possible for strangers to attempt it without disaster. Only a general description will be given of it, therefore, and the chart of the river on a large scale, published by the Coast Survey, will give the mariner a better idea of its dangers than any verbal description.

The Sasanoa begins opposite Bath, between Towesic and Preble's points. Here it is about two hundred and seventy yards wide, and takes a course about **E NE.** for a quarter of a mile, where it is crossed by a drawbridge. Passing this, a much wider portion of the stream opens, and the course changes abruptly to **SE. by S.** The river is here nearly three-eighths of a mile wide, and sends off to the northward an arm nearly as wide, forming a broad but shallow cove, called Pleasant Cove. Although wide at this point between the banks, the channel itself is quite narrow. It approaches the northeastern shore by a gradual curve, leaving extensive flats, mostly dry at low water, on the southwestern side. The channel hugs the northeastern shore for three-eighths of a mile, and is seventy-five yards wide, with a depth of from thirteen feet to six fathoms. It then gradually turns towards the southwestern shore; and five-eighths of a mile beyond Preble's Point it runs into a pocket. A bar with five feet at mean low water here occupies the stream from bank to bank. The shores are mostly high and the lands cleared and cultivated. At the bar the river is a quarter of a mile wide, but it now gradually but steadily narrows until, about a mile and a quarter from Preble's Point, it is but fifty yards across, and obstructed by two very dangerous rocks,—the one on the northwestern side called **The Boiler**, and that on the southeastern shore known as **Lime Rock**,—the latter being marked by a spindle. The Boiler is never out except at extremely low spring tides. Here the current, especially at half-ebb, rushes with great velocity through the narrow rocky channel, and meeting with the obstructions offered by these two rocks boils over them and breaks into cross-currents, eddies and small whirlpools, very dangerous to boats and vessels endeavoring to pass. The roar of The Boiler is heard at Heal's Cove, nearly two miles below. The velocity of the current of ebb at its height is at this point thirteen miles an hour on spring tides. This narrow reach of the Sasanoa is appropriately called Upper Hell Gate.

Pleasant Cove.

Upper Hell Gate.

From Upper Hell Gate the river gradually widens, with long but shallow coves on both shores, but continues the same general course **SE. by S.** for a little over three-quarters of a mile farther, or about two miles from Preble's Point, where it is about two hundred and seventy yards wide, and passes between a bluff precipitous point on the north and a grassy, gently sloping, cleared and cultivated point on the south, into a broad and handsome bay. The rocky precipitous bluff on the north is Hockomock Point, and its summit is thickly wooded with fir and spruce. The low grassy point on the southern shore is **Mill Point**, and there are several houses on it; and behind it, to the eastward, is a mill-dam and saw-mills, known as **Fisher's Mills**.

Hockomock Point.

The large bay into which the Sasanoa here expands is called Hockomock Bay. It is a mile and a quarter in width, (measuring **NW.** and **SE.**, and the same in length **NE.** and **SW.**,) is full of islands, ledges and flats, and the channel is narrow and so difficult that even those who are best acquainted with its windings and turnings sometimes go ashore. In its extreme northern corner it sends off a long arm into the land, known as **Brooking's Bay**, a large portion of which is dry at low water. Into its southwestern corner empties **Back River**, which begins in the Kennebec,

Hockomock Bay.

(page 395,) and with a general course **NNE.**, between Georgetown and Arrowsic islands, finally joins the Sasanoa at this point in Hockomock Bay.

Into the northeastern part of Hockomock Bay empties Montseag Bay, which is the southern portion of that broad but shallow passage between Westport Island and the mainland, which, beginning in Wiscasset Bay between Clough's and Birch points, runs about **SW. by S.** for six miles to its point of entrance into the Sasanoa, and is also called **Back River**; but to distinguish it from the other, which connects the Kennebec and Sasanoa, the former is sometimes called **North Back River** and the other **South Back River.** A drawbridge, called **Westport Bridge,** crosses the North Back River half a mile above its entrance into Hockomock Bay.

Montseag Bay.

The eastern point of the mouth of North Back River is a partially wooded low point called **Hubbard's Point,** with a prominent leaning tree upon it. The western point is high, cleared and cultivated, and slopes gradually from its crest to the shore. Farm-houses occupy the summit of the point, which is called **Phipps' Point.**

Next to the northeastward of the mouth of South Back River is a long but shallow cove, called **Hall's Bay,** making into the Georgetown shore in a southerly direction for about a mile. It is of no importance,—being almost entirely bare at low water.

Off the mouth of Hall's Bay lie four islands in the southeastern portion of Hockomock Bay. The two southernmost are low, connected at low water and only one hundred and fifty yards from shore, and are called Webber's Islands. To the northward of these islands, about three hundred and eighty yards, are two others,—the western one low and covered with scrub, with one or two small birch saplings on it, and called **Berry Island.** Nearly two hundred yards to the eastward is another islet, rocky and covered with a scrubby growth, and called **Castle Island.** Along the northern shores of these two islands the channel of the river takes its course,—the northern part of Hockomock Bay for some distance to the eastward of Hockomock Point being occupied by flats bare at low water.

Webber's Islands.

After passing Castle Island the river turns to the southward and eastward, passing between Hubbard's Point (the most westerly point of Westport Island) and Castle Island. Here the passage is a quarter of a mile wide and forms the upper entrance to another narrow and dangerous reach of the river, called Great Hell Gate. The general course of this reach is **S. ½ E.**, its length about a mile and a quarter, its breadth, where widest, (which is at its southern end,) a quarter of a mile, and where narrowest, one hundred and twenty yards. It begins, as above mentioned, at **Hubbard's Point,** a low point, backed by woods, with a single leaning pine on its extremity; then, gradually narrowing, it passes between a group of wooded islets to the eastward, called **Tyler's Islands,** and a low, rocky and wooded island on the west, called **Bareneck Island.** The course is directly for a bare, white, rocky point,—the northeastern point of **Beal's Island,**—where the river contracts to a width of one hundred and twenty-five yards, takes a sharp turn to the eastward, and passes between the southern point of Tyler's Islands on the north and this point, called **White Point,** on the south. This is the worst part of the Gate, as off the southern end of Tyler's Islands lie two bad rocks, (one bare at low water, the other at or about three-quarters ebb,) called **The Boilers.** Between White Point and The Boilers the channel is only fifty yards wide. On the ebb the volume of water from above rushes through directly for these rocks, and striking them, takes a direct course over for White Point. Where it meets the eddy near White Point a perfect whirlpool of conflicting currents and eddies is formed, dangerous at any time to pass; but at half-ebb, on a spring tide, a wall of water from six inches to a foot in height stretches across from The Boilers to White Point. The roar of the water boiling over these rocks is, at such times, distinctly audible at Goose Rock Passage, two miles below. The above remarks are true also of the flood-tide, although in a less degree, as the velocity of the current is not so great as that of the ebb and the consequent danger is less.

Great Hell Gate.

Behind Tyler's Islands, and between them and Westport, is a narrow passage, (full of obstructions, but with good water at high tide,) called **The Back Door,** leading from Heal's Cove and the saw-mills into Great Hell Gate.

Heal's Cove is long and moderately wide, and makes into the Westport shore behind Hubbard's Point. Tyler's Islands obstruct its mouth,—the main entrance being close under Hubbard's Point. Near its head it is dammed and a mill-pond formed, by which **Heal's Saw-mills** are run. There is a great deal of lumber cut and shipped from these mills; but the channel of the cove is much obstructed and unsafe for strangers.

Heal's Cove.

There is a bad rock, with only four feet upon it, one hundred yards **NE.** from Bareneck Island.

After passing between White Point and Tyler's Islands, the reach turns again to the southward and runs behind Westport and Beal's islands to its entrance into Knubble Bay. It gradually widens as it proceeds to the southward, being two hundred and fifty yards wide at **Willis' Point,** a third of a mile below Tyler's Islands, and a quarter of a mile wide at **Brooks' Point,**—the lowest point of the reach.

A good safe anchorage, with from two to three and a half fathoms, may be found to the eastward of Willis' Point, in Tarbox's Cove, which makes into the land at Westport behind the point. The bottom is soft, the holding-ground excellent, and the anchorage is entirely free from eddies and strong currents.

Tarbox's Cove.

At Brooks' Point the river widens and forms a broad deep bay, nearly five-eighths of a mile wide and a mile and a quarter long, called Knubble Bay, lying between Westport and Georgetown islands. Its general course is **N. ¼ E.** and **S. ¼ W.**, and it affords good anchorage throughout all parts of it. It received its name from a very peculiar projection from the shore of Georgetown, which extends out into the bay three-quarters of a mile below Brooks' Point. This projection is oval in form, and is connected with the Georgetown shore by a narrow isthmus about a hundred yards long and fifty wide; and at high water it is nearly an island. This singular point or island is called **The Knubble,**

Knubble Bay.

and is grassy, and entirely bare of trees with the exception of a few surrounding the houses and outbuildings on its summit. Off its eastern end lies a rocky islet, called **Little Knubble**, with a single birch tree on it. There is a dangerous rock off its eastern end.

On the northern side of The Knubble is good anchorage, in soft bottom, in the mouth of a cove, called **Dark Cove**. On the southern side is Riggs' Cove, the best anchorage in the bay. Here is quite a settlement, called **Riggsville**,—a good store, a ship's blacksmith-shop and a tank of most excellent water, with hose and pipe for filling boilers or casks. **Riggs' Cove.**

Georgetown Island is here nearly separated into two parts by a long and narrow cove, called **Robin Hood's Cove**, which runs from Knubble Bay to the southward, beginning at Riggsville, and running to within less than a mile of the head of Sagadahoc Bay, (see also page 393.) There is good water in this cove for some distance from its mouth, but it is little used.

Lowe's Point is the eastern point of the entrance to Robin Hood's Cove and the southern point of the entrance to Goose Rock Passage. Here Knubble Bay terminates,—the river taking a very eccentric turn to the eastward, between **Newdick's Point** (the southernmost point of Westport Island) on the north and Lowe's Point on the south, with a width of about three hundred yards, and enters the Sheepscot River through Goose Rock Passage. Both Lowe's and Newdick's points are low, but the former is wooded and the latter bare. At the entrance the course of the passage is about **SE.**, but it gradually turns to the northward until it runs **E.** by **N.**, between Westport and McMahan's islands, into the Sheepscot. It is a little over a mile long, three hundred yards wide at its western end, and gradually widens to its mouth, where it is nearly half a mile wide. **Lowe's Point.** **Goose Rock Passage.**

Just to the eastward of Newdick's Point is **Newdick's Cove**, full of ledges and unfit for anchorage. On the eastern side of Lowe's Point is Lowe's Cove, a deep indentation in the northern shore of Georgetown, offering a fair anchorage in from three to ten fathoms, and perfectly free from obstructions. Nearly in the middle of the passage, and between the two coves, lies a bare rocky islet, surrounded by very dangerous rocks and sunken ledges, over which the tide sets strongly. This is **Goose Rock**, and gives the name to the passage. **Lowe's Cove.**

One hundred and fifty yards **SE.** by **S.** from the southern end of Goose Rock is a very bad sunken rock, called **The Boiler.** It is never bare except at the very lowest tides, and is a very serious obstruction to the navigation of this passage. The channel passes between it and the Georgetown shore, and is only one hundred and fifty yards wide, with twelve fathoms water. The velocity of the current of ebb is here about five knots, and at half-ebb spring tides it has been known to reach a speed of seven knots. The point of Georgetown Island to the southward of The Boiler is low and rocky and is called Soldier Point. It forms the western side of the northern entrance to **Little Sheepscot River**, which runs between Georgetown and McMahan's islands, with a general course about **S.**, for one mile to its junction with the Sheepscot River. (See page 379.) The ebb tide sets very strongly into this river; and after passing The Boiler, off Goose Rock, you should, if possible haul up towards the northern side of the passage, to avoid being set into the river or on to the rocks to the northward of McMahan's Island. On the flood the current of the Little Sheepscot sets to the northward and that of Goose Rock Passage to the eastward; and the two currents meeting at Soldier Point cause dangerous whirls and eddies in that vicinity. **Soldier Point.**

Just to the eastward of Newdick's Cove (on the Westport shore) is a very comfortable and safe anchorage, called Brooks' Cove. Capital holding-ground, in four or five fathoms, soft mud, may be found off **Brooks' Fish-houses**, safe from all winds, and free from currents or dangerous whirls. Even a stranger may enter this cove by passing between Whittum Island and the buoy on Northeast Point Ledge, keeping the middle of the passage, rounding **Brooks' Point** (the eastern point of entrance to the cove) at a distance of a hundred and seventy-five yards, and running up into the cove, anchoring off the wharves. **Brooks' Cove.**

From the entrance to Little Sheepscot the river takes a course about **E.** by **N.** for a little over half a mile, gradually widening until it empties into the Sheepscot, between Blake's Point, the southeastern point of Westport Island, and **Northeast Point** of McMahan's Island. Here it is obstructed by a small low island, wooded mainly with fir, lying nearly in the middle of its mouth, and called **Whittum Island.** (See page 380.) **Blake's Point.**

From Northeast Point a long ledge, bare in places at extreme low tides, makes out for over two hundred yards in a **N.** by **E.** direction exactly for Whittum Island. It is called **Northeast Point Ledge**, and is marked by a black spar-buoy placed on its northern point. The channel lies between this buoy and the southern end of Whittum Island, as the passage between that island and Westport is too much obstructed to be at all safe. Twelve fathoms at low water can be taken between Whittum Island and the buoy on Northeast Point Ledge.

No sailing directions for Sasanoa River can be given. Strangers should never attempt it, as good pilots can be found at Five Islands Harbor, (on Georgetown Island;) at Jewett's Cove, (on Westport;) or at Bath if the river is entered at its western end. Its currents, eddies and dangerous rocks offer such difficulties to a safe passage that even the pilots are often obliged to seek anchorage in some of the coves and wait a favorable opportunity for proceeding. A stranger may, however, with a favorable tide go up Goose Rock Passage as far as Brooks' Cove, but under no circumstances farther. There anchorage and a pilot will be found. Through this river from the Kennebec to Upper Hell Gate not less than five feet can be carried. The shoalest spot is the bar five-eighths of a mile to the southeastward of Preble's Point, on which there is five feet. After crossing the bar there is not less than fifteen feet until you are past the Gate and enter Hockomock Bay. The least water in the channel through this bay is thirteen feet, which is found on the bar to the northward of Berry and Castle islands. When past this shoal there is not

less than four fathoms to the entrance to Great Hell Gate, and through this passage five fathoms may be taken. In Tarbox's Cove there is anchorage in from two to three and a half fathoms, sticky bottom; thence to Knubble Bay not less than seven fathoms may be carried; through the bay not less than seven and a half fathoms; and through Goose Rock Passage not less than nine fathoms.

In Dark Cove anchorage may be found in from two to four fathoms, muddy bottom; in Riggs' Cove, in from two to five fathoms, soft bottom; in Robin Hood's Cove, in from three to twelve fathoms, muddy bottom; in Lowe's Cove, in from three to ten fathoms, muddy bottom; and in Brooks' Cove, in from two to five fathoms, muddy bottom.

SAILING COURSES

FOR VESSELS BOUND ALONG THE COAST FROM KENNEBEC RIVER.

From Seguin to Monhegan the course is E. and the distance nineteen miles.
From Seguin to Portland Head the course is W. and the distance twenty miles.
From Seguin to Cape Ann the course is SW. ¼ S. and the distance seventy-four miles.

COAST FROM KENNEBEC RIVER TO CASCO BAY.

From the southern point of Hunniwell's Beach to Cape Small Point the distance is three miles and three-quarters and the direction **SW.** by **W.**; but the general course of the shore is, however, **W SW.** First the beach takes a wide sweep to the westward behind Wood Island, and then turns to the southward towards a group of bare rocky islets connected with it at low water, called the Fox Islands. Thus a wide but shallow cove is formed whose boundary on the east is Wood Island, on the west the Fox Islands, and on the north a low sand beach, dotted with many small sand hillocks, covered with a thin growth of grass, and over which the high land of **Sabino Head**, crowned with a thick growth of spruce and fir, is plainly visible.

Fox Islands.

The Fox Islands (see page 402) are a group of rocky islets lying close to the shore, and connected with it at low water. The easternmost island is the largest, and is five-eighths of a mile **W.** by **S.** ¼ **S.** from Wood Island. The southernmost islet, also bare and rocky, is an eighth of a mile **SW.** from the largest one, and the space between it is occupied by two or three small bare rocks hardly deserving the name of islets. The southern point of the beach off which they are situated is called **Morse's Point**. The Fox Islands are surrounded by shoals and ledges; and to the eastward of them is **Pond Island Bar**, and to the southeastward the famous **Jack-Knife Ledge.** They should not, therefore, be approached closely under any circumstances.

Morse's River.

From Morse's Point the beach runs **W.** for half a mile to the entrance to Morse's River, a shallow and crooked creek of no importance, impassable at low water even for a small boat. It is a quarter of a mile wide at its mouth, but rapidly contracts to less than a hundred yards; and it takes its rise in a shallow pond just back of Atkins' Bay. On the western side of the entrance is a small but rather steep hill of a peculiar white-looking rock, studded here and there with scrub fir and spruce trees, and called **Morse's Hill**, and sometimes **Morse's Little Mountain**, in contradistinction to a high bluff hill of the same kind of rock, wooded with the same species of trees, which rises abruptly out of the marsh a quarter of a mile to the northwestward of it, and is called **Morse's Mountain**. Both are used as landmarks for mariners bound in from sea and falling in with the shore between Small Point and the Kennebec.

Heron Island.

Heron Island, or **Heron Islands**, as the group should properly be called, is a group of three small rocky islets off the mouth of Morse's River, three-eighths of a mile from shore and half a mile **SW.** by **W.** from the Fox Islands. They lie **N.** and **S.** from each other, separated by very narrow clefts in the rock hardly wide enough for the passage of a small boat, and are entirely bare. Their shores are very bold-to, except the northern and eastern shores of the northernmost, which are obstructed by reefs of rocks, bare at low water. There is no passage to the northward of them except for very light-draught vessels in the hands of experienced pilots. Although bold-to, these islets should not be closely approached by a stranger, for several detached pinnacle rocks lie off their southern end; and two very dangerous ones—one bare at low water and the other at half-ebb—lie to the westward at the distance of a quarter and half a mile, respectively. The one bare at low water is the nearer to Heron Island, and has no name; but the other is called Bold Dick.

Bold Dick.

Sprague's River.

From Morse's River the shore (still formed by a sand beach dotted with sand hillocks) continues on a **W.** by **S.** ¼ **S.** course for a mile to the entrance to another small river, called Sprague's River. It is very similar in its character to Morse's River, and is dry at low water, narrow and crooked; and empties into the bay between a low sandy point on the east and a high, bluff, rocky head on the west,—the latter known to the fishermen as **High Rocks.** To the northward of it a cleared and cultivated field appears, called **Sprague's Pasture.** The shore is not bold-to, but the soundings decrease gradually as you approach the beach.

Isaiah's Head.

At High Rocks the shore now becomes rocky and thinly wooded, turns abruptly and runs **S.** for half a mile to a bare rocky point, called Isaiah's Head. This point is much indented on its eastern and southern faces by small shallow coves. About a hundred yards off its southern point lies a low grassy islet about a hundred yards square, surrounded by rocks, ledges and shoals, and called **Seal Island.**

To the northward of Isaiah's Head, one hundred and seventy-five yards distant and two hundred yards from the shore, lie two rocks, bare at half-tide, called the **Coot Rocks.** None of them are dangerous to strangers, because no stranger has any business inside of Cape Small Point without a pilot. Mackerel fishermen often pursue the fish up into these bights, and sometimes anchor here in fine weather; but even they (although well acquainted with the reefs) will not anchor unless the weather is very fine and the wind too light to enable them to get off shore before night. The whole of the coast from Seal Island to Heron Island is dangerous and should not be approached except in cases of dire necessity.

To the westward of Seal Island a cove is formed, having that island for its eastern boundary; and on the west a long point of moderate height, its summit covered with spruce and fir trees, and thence a long gradual slope of bare weather-beaten rocks descending to the sea. This point is called Cape Small Point, and is the eastern point of entrance to Casco Bay. Its geographical position is **Cape Small Point.**

Latitude ..... 43° 42′ 7.5″ N.
Longitude ..... 69° 49′ 54″ W.

It is three miles and a half **W.** ¼ **N.** from Seguin Light-house; nearly seventeen miles **E.** ¼ **N.** from Portland Head; a little over nine miles **E.** ½ **N.** from Half-Way Rock; and seventeen and three-quarter miles **E.** by **N.** ¼ **N.** from Cape Elizabeth Light-houses. From Cape Ann (Thatcher's Island) it bears **NE.** ½ **N.**, distant seventy-two and a half miles.

The cove formed between Cape Small Point and Seal Island is called **Seal Cove.** There is no good holding-ground in it; but the water is deep, the entrance unobstructed, and vessels may anchor there in fine weather in from two to six fathoms.

Six hundred yards **S.** from the extremity of Cape Small Point lies a bare rocky islet, called Glover's, and sometimes **Fuller's Rock.** It is tolerably bold-to on its northern and eastern sides, but on the southern and western sides is shoal and must not be approached too closely. Between this rock and the cape is a good channel with from three to ten fathoms water, but obstructed by **The Button-Moulds** and **Bill Wallace's Ground.** It is, however, very much used by coasters, and, if the ledges were buoyed, would be perfectly safe at all times. **Glover's Rock.**

To the westward of Small Point the shore takes a sweep to the northward and around by **W.** to the southward, where Bald Head is formed. It thus makes a wide cove nearly three-quarters of a mile in width, with deep water but poor holding-ground,—the bottom being either rock or hard sand. This is Bald Head Cove, which is obstructed by Bald Head Ledge and by Bill Wallace's Ground, and is not at all a safe or good anchorage. **Bald Head Cove.**

CASCO BAY.

This very extensive bay occupies the space between Cape Small Point and Cape Elizabeth,—a distance of seventeen and three-quarter miles. Its eastern headland, Cape Small Point, is in

Latitude ..... 43° 42′ 7.5″ N.
Longitude ..... 69° 49′ 54″ W.

Its western headland, Cape Elizabeth, is in

Latitude ..... 43° 33′ 53″ N.
Longitude ..... 70° 11′ 45″ W.

Between these two capes the bay extends up into the land an average distance of about twelve miles. It is full of islands, and the shore-line of the mainland is very much cut up by rivers and indented by long and deep coves. The whole number of islands in Casco Bay is one hundred and thirty-six, and very many are fertile and under cultivation, and nearly all are inhabited. Nearly every island lies **NE.** and **SW.**, which is the general course of the bay and of all the rivers and coves contained within its limits.

A stranger bound to Portland falling in with the eastern shores of the bay would recognize **Cape Small Point** as the rocky point crowned with fir, but bare of all trees or vegetation from its wooded summit to the sea, towards which it slopes easily and regularly. A bare rocky islet **S.** of it is **Glover's Rock**; the bare bluff head a little to the westward is **Bald Head**, and the half-bare and half-wooded islet seen up in the bay to the northwestward of Bald Head is **Wood Island.** West of Wood Island, **Mark Island** will appear, low, rocky and crowned with fir. To the westward of Mark Island, a tolerably high, partly wooded island, showing on its southwestern face a peculiar white-looking surface, dotted with scrub-growth, is **Ragged Island.**

A tall granite light-tower, appearing to rise from the water well to the westward of Ragged Island, is **Half-Way Rock Light-house,** built on Half-Way Rock, as a guide for the bay to vessels going either to the eastward or westward. It shows a fixed white light, varied by red flashes. Far to the westward of Half-Way Rock will appear the high land of Cape Elizabeth, and on a clear day the light-houses may plainly be seen. Sometimes, but seldom, Portland Head Light-house is visible; but owing to its insufficient height it is hidden by its back-ground of trees, except when the sun shines directly upon it.

When a stranger has these light-houses (viz: Half-way Rock light and Cape Elizabeth lights) in view, he may shape his course for Portland Harbor with safety.

The shores of Casco Bay will be described as nearly as possible in the general description of the approaches to the several rivers and harbors contained within its limits.

NEW MEADOWS RIVER.

A description of the approaches to this river necessarily includes mention of that portion of the shores of Casco Bay contained between Cape Small Point and Horse Island, which latter forms the eastern point of entrance to the river. From Cape Small Point the general course of the shore is first about due **N.** for a quarter of a mile, and then sweeps around gradually to the westward, running about **W.** by **S.** for half a mile to Bald Head, a bluff, precipitous headland, bare of trees and bushes and with scarcely any grass upon it. Between it and Small Point is a cove with from two to six fathoms water, but poor holding-ground, called **Bald Head Cove,** which has been previously mentioned. Bald Head is sixty feet high.

Bald Head.

From Bald Head the shore turns abruptly and runs nearly **N NW.** for three-quarters of a mile to a strip of low beach, called **Head Beach.** The shore-line is rocky and the shore precipitous and partly wooded, with a few houses scattered along it,—most of them inhabited by fishermen A generally barren and desolate look always pervades the spot.

Head Beach.

There is tolerably good anchorage under the northern side of Bald Head, in what is called Head Cove. During the summer as many as fifty fishing-vessels will anchor here nightly, in moderate weather; but it is not tenable in northerly winds.

Head Cove.

From Head Beach the shore-line runs about **N NW.** for a third of a mile to a low bare point about twenty-five feet high, called **Wallace's Head.** The shore is low, but backed by high land between sixty and one hundred and fifty feet high, and wooded here and there with spruce and fir.

From Wallace's Head the shore runs about **NE.** by **N.** for a mile and an eighth to a low point called **Pitch Pine Point,** which is the southwestern point of the entrance to a long and narrow cove, called Small Point Harbor, making in to the southward for a mile and a quarter. The entrance is very much obstructed, and there is a bar at its mouth with only three feet upon it at low water; so the harbor is only available for light-draught vessels.

Small Point Harbor.

From Pitch Pine Point the shore-line runs to the northeastward, and then turns again to the southwestward, forming a long and shallow cove, known as **Tottman's Cove,** and of no importance. The eastern point of the entrance to this cove is known as Newbury Point, and the land is here sixty feet high and rocky. To the westward of Newbury Point a small cove, with tolerably good anchorage, makes in to the northward, called **Fish-House Cove.** Its western point is a rocky gently sloping point, called **Cat Point.**

Newbury Point.

On the western side of Cat Point a small and narrow cove, with fair anchorage, called **Carrying-Place Cove,** makes in between the point and a high thickly wooded head, called Carrying-Place Head, one hundred feet high, gently sloping on its southern face, but bluff and precipitous on the western side.

Carrying-Place Head.

From Carrying-Place Head the general course of the shore is about **N NW.** for about a mile and a quarter, where it passes behind Horse Island and the shores of New Meadows River.

To a vessel bound into this river from the eastward after passing Cape Small Point, and when Bald Head bears **N.** by **E.** ½ **E.**, one mile and a quarter distant, Wood Island will appear bearing about **N.**, three miles distant. This island will show as a high partly wooded island, with bare white rocks appearing here and there on its surface. Close to it, and to the eastward, will appear a low thickly wooded island, called **Little Wood Island;** and between these islands and the shore of Cape Small Point is a wide passage with from four to six fathoms water, but somewhat obstructed, leading up to Small Point Harbor. Wood Island lies a little over a mile and a half **N.** ½ **W.** from Bald Head, and is half a mile long in a **N NE.** and **S SW.** direction. On its southern side it is bold, bluff and rocky, and its summit is one hundred and twenty feet high. A good channel exists on the northern side of this island, between it and Carrying-Place Head, where there is good anchorage in southerly winds in from three to eight fathoms water.

Wood Island.

To the westward of Wood Island, but farther up in the bay, will appear Flag Island, bearing **N.** ½ **W.**, and four miles distant. It is low and rocky, about eight hundred yards long, and from this position will appear as a small wooded island in range with distant high land behind it. It may be passed on either hand going into New Meadows, but must receive a berth, as it is surrounded by shoals. Flag Island bears **N NW.** from Wood Island, one mile and a half distant, and from Bald Head **N.** by **W.** ½ **W.**, three miles distant.

Flag Island.

NW. by **N.** ½ **N.**, and about three miles distant, will appear a small, low, rocky island with a thick growth of stunted fir on its summit, showing to the westward of Flag Island and against the high land of Harpswell Neck. This is Mark Island, sometimes called **Woody Mark Island** to distinguish it from the island of the same name in Merioneag Sound. It is one mile and three-eighths **W.** by **S.** from the southern end of Wood Island,—the main channel leading between them. It bears **NW.** ½ **W.** from Bald Head, distant two miles, and **SW.** by **S.** ½ **S.** from Flag Island, distant one mile and a half. A little to the westward from it, but much nearer, bearing **NW.** by **N.**, and two miles distant, a low, bare, rocky islet, called **The Brown Cow,** will appear. Its shores are bold-to and may be approached very closely on either hand. The Brown Cow bears from Bald Head **W.** by **N.** ½ **N.**, one mile and a half distant.

Mark Island.

A little to the westward of The Brown Cow, on a **NW.** bearing, a large island, partly bare and partly wooded, will appear. This is Ragged Island, and the white-looking rocky islet in range with it is called **The White Bull.** Ragged Island is a rocky island about half a mile long and a quarter of a mile wide, lies **N NW.** and **S SE.**, and is distant from Bald Head three miles and a half. Its southeastern end is a steep bluff one hundred feet high, with the summit covered with a stunted growth of fir. The rock of which the island is formed has been bleached to a peculiar whitish color, which, relieved here and there by a solitary spruce or fir tree, gives the southern slope a very peculiar appearance. Ragged Island lies off the entrance to Quohog Bay.

Ragged Island.

If bound up New Meadows River from the eastward, the courses lead between Bald Head and The Brown Cow, between Mark Island and Wood Island, up to Carrying-Place Head. Pass to the westward of this and to the eastward of Flag Island, and keep to the northward towards a green, wooded, gently sloping point, backed by high lands, cleared, cultivated and thickly settled. This low point is the southern end of Great Island, sometimes called **Sebascodegan Island**, which forms the western shore of the river from its mouth to Foster's Point, five miles above. It is split into three low points,—the westernmost, forty feet high, called **West Cundiz Point**; the middle point is **East Cundiz Point**; and between the two is contained a narrow cove, known as **Cromwell's Cove**. The easternmost point is called **Fort Point**, and between it and East Cundiz is a shallow cove called **Sandy Cove**. **Great Island.**

Two hundred yards **S.** from East Cundiz Point lies a low, bare, rocky islet, called Rogue Island, quite bold-to on its eastern side. The true mouth of New Meadows River is between this island and Bear Island, (on the eastern shore,) and is three-quarters of a mile wide and perfectly unobstructed. **Rogue Island.**

To the eastward will appear an island with steeply sloping shores, crowned with spruce and fir. This is Bear Island, and forms the eastern side of the entrance. Its southern point is a steep bluff sixty feet high, and the rock, from exposure, has a peculiar gray or slate color. To the eastward, in range with the main shore, will be seen a low island, called **Malaga Island**,—the high cleared slopes of the mainland appearing above all. **Bear Island.**

On approaching the mouth of the river, after passing Flag Island, you will pass half a mile to the westward of a wooded island about forty feet high, lying close in with the eastern shore. This is Horse Island, lying nearly **N NE.** and **S SW.**, and about three-quarters of a mile long. Behind it, between it and the main shore, is a most excellent anchorage, with from two to six fathoms, called **Horse Island Harbor**. A good mark in approaching this harbor from the westward is a peculiar bald spot of a yellowish-white color appearing on the top of the wooded hills behind Carrying-Place Head, and known as **Tottman's Bumper**. Passing Horse Island you come to Rogue Island, and then the course leads between East Cundiz and Fort points on the west and Bear Island on the east. There is a deep but narrow passage close along the eastern shore of the river, behind Malaga Island, but strangers must not attempt it. **Horse Island.**

After passing Fort Point a large cove opens, with several bare rocky islets to the eastward of it and quite a village upon its banks. This is **Cundiz Harbor**, or, as it is usually called, The Harbor. It is an excellent anchorage, with every facility for obtaining wood, water or fresh provisions. A large hotel is a prominent feature on its shores; and the bare islets off its mouth are **Cedar Ledges**. **The Harbor.**

Nearly all of the shores of Great Island are cleared and cultivated. The eastern shores of the river are also, for the most part, under cultivation, more especially those abreast of The Harbor. They are steep and bold-to and the crests of the hills are from one hundred to one hundred and forty feet high.

After passing Cedar Ledges another cove opens on the Great Island shore, which appears to be contained between two small islands lying off the western shore. The eastern of these is a rocky sparsely wooded islet, called **Sheep Island**, and is a quarter of a mile off shore. The western islet is close to the Great Island shore and is called **Hopkins' Island**. The entrance to the cove, which is called Dingley's Cove, leads between the two up to the southern end of a larger island, also lying along the western shore, called Dingley's Island. **Dingley's Cove.**

On the eastern shore of New Meadows River, after passing Bear Island, the shore-line turns away to the eastward and forms a large and deep bay, called Winnegance Bay. Immediately opposite to the southern point of Sheep Island a narrow and deep passage passes from the river between two high and steep bluffs into a perfectly land-locked cove called The Basin. In this passage there is not less than eighteen feet at mean low water and it is entirely unobstructed. In The Basin you may lie at anchor in from three to seven fathoms, soft bottom, completely sheltered from all winds of whatever strength. Vessels passing up the river will not be able to see the entrance to The Basin, but will see the masts of the vessels at anchor there as soon as they are abreast of **Basin Point**. **The Basin.**

Winnegance Bay is formed by a deep indentation in the eastern shore of New Meadows River, between Birch Point on the north and Basin Point on the south. At the entrance it is about a mile wide, but gradually contracts as it extends to the northeastward until it becomes a mere creek. The bay proper makes in about a mile, but several small arms make into the shore still farther, and finally a brook connects it with **Winnegance Creek**, on the Kennebec. On the northern shores of this bay is situated the township of **West Bath**, a suburb of the city of Bath. The shores are mostly very steep and bluff and the land well cleared and cultivated. **Winnegance Bay.**

Birch Point is sixty feet high and well wooded, except on the extreme point, which is bare.

Dingley's Island is very nearly bare of trees, but under cultivation, and lies about one hundred and fifty yards off the shore of Great Island. Its southern end has a gradual slope, but the northeastern point is high and steep. **Dingley's Island.**

Immediately opposite to the centre of Dingley's Island, and about four hundred yards from it, is the southern end of Long Island, which is a mile and three-eighths in length and quite narrow. It lies along the eastern shore of Great Island, extending in a **N.** and **S.** direction, and has between it and that island a passage available at high water for light-draught vessels but bare at low water. Long Island is, in places, thickly wooded, in others the land has been lately cleared. **Long Island.**

The channel now leads between Long Island and the steep shores of West Bath; and when abreast of the northern end of Long Island there will be seen ahead, and about a quarter of a mile off, a group of islets in mid-river. The easternmost is well wooded and is called **Bragdon's Island.** The others are much smaller than Bragdon's Island and bare of trees. The whole group is known as the Three Islands, though really four in number. To the westward of them is a large but shallow cove, indenting the Great Island shore; and to the northward, a quarter of a mile distant, will appear the southern end of **Williams' Island,** low, but thickly wooded with a variety of trees.

Three Islands.

A little to the eastward of Williams' Island is another small thickly wooded island, called Merrit's Island, in range with a high steep hill whose sides are thickly wooded but its summit bare. This hill, which is called **Rich's Mountain,** is one hundred and forty feet high, and is visible as a landmark from the approaches to Casco Bay.

Merrit's Island.

To the eastward of Rich's Mountain appears the undulating shores of the western portion of that peninsula on which is built the city of Bath. They are mostly well wooded with oak, maple, spruce, pine, birch and other trees.

Between Merrit's Island and the mainland is the entrance to a long, narrow cove, called **Mill Cove,** which leads up to a large saw-mill at its head.

Between Williams' Island and Merrit's Island is a good channel, with two fathoms at low water, leading into a large, wide, but shallow cove, called Broad Cove. Between Williams' Island and Foster's Point, to the westward of it, is another entrance to this cove, but it is dry at low water.

Broad Cove.

Foster's Point is a high, cleared and cultivated peninsula on the eastern shore of the river, just to the westward of Williams' Island. Several houses occupy the summit, and the rest of the land is mostly grass and grain land, although there is some wood. The river here turns to the westward, running between Foster's Point and Indian Point, the northeastern extremity of Great Island. Indian Point is low and wooded with a variety of trees, but the land behind, as it approaches the high lands, is cleared and cultivated. To the northwestward of this point, a quarter of a mile off, is a low bare islet, lying **N.** and **S.**, called **Bombazine Island.**

Indian Point.

When past the northern end of Bombazine Island a wide passage opens leading to the westward, between the northern end of Bombazine and a group of islets lying to the southward of Woodward's Point. This is the entrance to an inland passage leading along the northern shores of Great Island into Harpswell's Sound, and called Simon's Gurnet. The passage is not available except for small boats, as it is bridged by a permanent bridge connecting Great Island with the mainland at **Buttermilk Point.**

Simon's Gurnet.

The northern point of the entrance to Simon's Gurnet is formed by Woodward's Point, a high gradually sloping point of land, mostly cleared, but with a good deal of oak wood upon it. The summit is occupied by farm-houses, outbuildings and cleared land, mostly grain-fields. Two bare rocky islets lie **S.** from the point at one hundred and two hundred yards distance; and a quarter of a mile **SW.** from it is a small wooded island called **Coombs' Island.** The channel into Simon's Gurnet leads between this island and the northern shore of Great Island.

Woodward's Point.

From Woodward's Point to the northward the western shores of New Meadows River are undulating, of moderate height, cleared and cultivated. About a mile above the point is a large wharf, and several houses back of it on the summit of the hill. This is **Cushman's Wharf,** and here ships were built when ship-building was a profitable occupation. The wharf and ship-yard are now deserted and fast falling to decay.

One mile and a quarter above Woodward's Point, and about a quarter of a mile above Cushman's Wharf, the river divides,—the main channel going off to the northeastward, hugging the eastern shore; and on the western side a long bay, bare at low water and called Middle Bay, is formed.

Middle Bay.

Between Middle Bay and the main channel is a high round hill, called Howard's Point, forming the southern end of the peninsula separating the two bodies of water. Its crest and part of its sides are wooded, its shores are steep, and at its southern extremity is built a large stone wharf for the use of vessels loading with stone. Here is a large granite-quarry, and considerable business was formerly done here in that line.

Howard's Point

The surveys of the Coast Survey extend no farther to the northward than Howard's Point; and half a mile above the point the river is bridged by a permanent bridge, called **Bull's Bridge.** Howard's Point is, therefore, the head of navigation.

DANGERS

IN APPROACHING AND ENTERING NEW MEADOWS RIVER.

I. ***Coming from the Eastward.***—A vessel bound into this river and coming from the eastward will leave Glover's Rock to the eastward and steer up towards Mark Island. The first danger encountered on this course is Bald Head Ledge, bare at half-tide, and one of the most dangerous on the whole coast. It lies three-eighths of a mile **S.** by **W.** ¼ **W.** from Bald Head, and **W.** ¼ **N.**, three-quarters of a mile, from Cape Small Point; and always breaks, even in the calmest weather.

Bald Head Ledge.

After passing Bald Head Ledge the course leads to the northward, between Bald Head and The Brown Cow; and when abreast of the former there will be seen to the northeastward a red spar-buoy (No. 2). This is on Gooseberry Island Ledge, which lies just to the westward of Gooseberry Island, and is awash at low water. The ledge is of small extent,—extending N NE. and S SW. for about two hundred and fifty yards, and very narrow; and between it and the island there is a passage with five fathoms, which is, of course, unfit for use by strangers. The buoy is placed in five fathoms about one hundred yards to the southwestward of the shoal part of the ledge, and is one of the guides to the approaches to Small Point Harbor.

Gooseberry Island Ledge.

When past Gooseberry Island Ledge the course still continues to the northward, between Wood Island and Mark Island; but, *if bound into Small Point Harbor*, you must change course more to the northeastward. On this course, when well into the entrance, you must look out for Middle Ledge, lying exactly in the middle of the harbor, between Wood Island and the western shore of Cape Small Point, and awash at low spring tides. It is a small detached ledge, about one hundred and twenty-five yards in diameter, and bold-to on all sides. A spar-buoy, painted red and black in horizontal stripes, is placed in four fathoms off its southwestern side, and may be passed on either hand by giving it a berth of about one hundred yards.

Middle Ledge.

Passing Middle Ledge, the course leads towards a red spar-buoy (No. 4) which will be seen on the eastern side of the harbor, close in with the shore. This is on Pitch Pine Ledge, which makes off from the eastern shore of the harbor for about three hundred yards, and has seven feet at mean low water close to its western edge. The buoy is placed in four fathoms just to the westward of the shoal part of the ledge.

Pitch Pine Ledge.

But, bound in New Meadows River, after passing Gooseberry Island Ledge, and approaching Mark Island, look out for Wyman's Ledge, a very dangerous ledge, lying nearly in the middle of the passage, with four feet upon it at mean low water. It is half a mile E. by S. ½ S. from the southern end of Mark Island and a mile and a half NW. ¼ W. from Bald Head, and is not buoyed.

Wyman's Ledge.

When past Wyman's Ledge beware of getting too close to Wood Island; as off the southern point of this island is *a bad ledge* extending three hundred yards to the southwestward; and in the same direction, at the distance of five hundred yards, there is also *a small shoal spot, with sixteen feet at mean low water*, having a deep passage between it and the ledge. Give the point a berth of one-third of a mile in beating in or out, and this will lead clear of danger.

About three-eighths of a mile NE. ½ E. from Mark Island and one mile W. from the southern end of Wood Island is a bad ledge, with six feet at mean low water, called Chivers' Ledge. There is a channel with six and a half fathoms between it and Mark Island, but it is dangerous for strangers. This ledge obstructs the channel into New Meadows and into Small Point Harbor and is not buoyed.

Chivers' Ledge.

After passing Chivers' Ledge there are no obstructions until you are up with Carrying-Place Head, when there will be seen ahead an iron spindle, painted black, with cage on top, about in the middle of the passage between the head and Flag Island. This spindle is on Jamison's Ledge, a long and dangerous ledge, extending in a N. by E. and S. by W. direction for nearly half a mile from the spindle. Its southern end is half a mile NW. by W. from Carrying-Place Head and the same distance E SE. from the southern end of Flag Island. Thus it is nearly midway between the two points. It is bare in many places at low water, and it is not safe for strangers to go to the westward of it on account of a dangerous ledge between it and Flag Island, called *Flag Island Ledge*, which is bare at low water, lies midway between Jamison's Ledge and Flag Island, and is not buoyed.

Jamison's Ledge.

When passing between Burnt-Coat Island (a small thickly wooded island, lying about half a mile to the northward of Carrying-Place Head) and Jamison's Ledge there will be seen, bearing about NE., a bare rocky islet, guarding the entrance to Horse Island Harbor. This is The North Blacksnake, which lies about three hundred yards N. from Burnt-Coat, and has bold shores. Between this ledge and Jamison's the channel is about nine hundred yards (or half a mile) wide.

The North Blacksnake.

Vessels going into Horse Island Harbor usually leave the Blacksnake to the southward, going between it and Horse Island. Sometimes those well acquainted with the dangers will pass between Burnt-Coat and the Blacksnake. Light-draught vessels may safely do this, as the only ledge in the way has *twelve feet at low water*.

Vessels drawing over eight feet should never attempt to stand across the northern end of Flag Island, as the ground is shoal in a N NE. direction for nearly three-quarters of a mile. There are four distinct shoals, with deep water between them, and the soundings upon them vary from ten to fifteen feet. As a good rule, do not stand to the westward of Mark Island bearing SW. by S. ½ S. until to the northward of Goudy's Ledge. Then you may stretch clear over to Rogue Island.

Shoals north of Flag Island.

When past Flag Island and the Blacksnake and approaching Horse Island, an iron spindle with cage on top, painted red, will appear to the westward. This is on Goudy's Ledge, which obstructs both the eastern and western channels into New Meadows, and is

Goudy's Ledge.

Dangers--New Meadows River. bare at half-tide. It is three-eighths of a mile S. ¼ E. from Rogue Island and a little over half a mile N. ¾ E. from Flag Island. There is a passage a quarter of a mile wide, with thirteen fathoms, between it and Rogue Island, and one nearly half a mile wide, with the same depth, between it and North Jenny Ledge, E. of Jenny's Island. Goudy's Ledge spindle is placed on the southern point of the rock; and vessels using the eastern channel leave it to the westward, while those coming from the westward leave it to the eastward.

If beating, do not approach Horse Island too closely on its western side. The water is shoal for about three hundred and fifty yards from the island, and it is best not to go inside of Carrying-Place Head bearing S. ¼ E., which bearing gives Horse Island a berth of four hundred yards.

Cedar Ledges. After passing Goudy's Ledge the channel is clear until you are past Bear Island, when there will be seen to the northwestward the Cedar Ledges, a group of bare rocks, lying N NE. and S SW., and forming the northern boundary of the entrance to Cundiz Harbor. They are quite bold-to, and being always bare there is no difficulty in avoiding them. Just to the northward of them are two more small bare rocks, called **Green Ledges**, obstructing the entrance to Dingley's Cove.

Sheep Island Ledge. Passing to the northward of Cedar Ledges there is a very dangerous rock, exactly in the middle of the channel, called Sheep Island Ledge. It is bare at low spring tides, lies three hundred and fifty yards SE. ¾ E. from the southern end of Sheep Island, is not buoyed, and is therefore a source of great trouble to mariners. A buoy has been recommended to mark this ledge.

Hen Island Ledge. After passing Sheep Island there is nothing in the way until you are up with the Three Islands; but vessels beating in or out must beware how they approach the southeastern shores of Winneganoe Bay. Here are two small islands, or rather rocks, lying N. and S. of each other, about three hundred yards apart and about four hundred yards from the shore, known as **Bushy Island** and **Hen Island**. They are surrounded by shoal water; and nearly five hundred yards W. from Hen Island is a half-tide rock nearly on the eastern edge of the channel. This rock is connected with Hen Island by a line of ledges, and the whole is known as Hen Island Ledge.

Bragdon's Rock. When nearly up with the northern end of Bragdon's Island beware of Bragdon's Rock, which lies four hundred and seventy-five yards E. from the northern point of the island and four hundred yards S. from Merrit's Island. It is bare at low water, but not buoyed. As it also very much obstructs the channel into Mill Creek, a buoy has been recommended to mark it.

The Middle Ground. Beyond Bragdon's Rock the way is now clear until you are past Foster's Point and approach Woodward's Point, when look out for the southern point of The Middle Ground. This extensive mud-bank occupies the centre of the channel, and extends in a N NE. and S SW. direction nearly seven-eighths of a mile. It is bare at low water throughout a great part of its length, and is growing in size every year. At present (1878) it extends from a point nearly six hundred yards SE. from Woodward's Point to within three-eighths of a mile of Howard's Point; and the shoal water at the mouth of Middle Bay makes off to nearly the same distance, thus contracting the channel above Cushman's Wharf to about one hundred and fifty yards.

A bare ledge lies off the western shore, four hundred and fifty yards to the northward of the southern extremity of Woodward's Point and about two hundred yards from shore.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING NEW MEADOWS RIVER.

I. ***Coming from the Eastward.***—Pass outside of Glover's Rock, so as to avoid The Button-Moulds and Bill Wallace's Ground, and when Bald Head bears N. by E. ½ E., The Brown Cow NW. by N., and Half-Way Rock Light-house W., with fourteen fathoms, hard bottom, steer N. ¾ W. for Flag Island. Continue this course, carrying not less than eight fathoms water, until you are abreast of the southern end of Wood Island and have nine and a half fathoms, hard bottom, when steer N. by E. ½ E. for Malaga Island, carrying not less than ten fathoms, and leaving Jamison's Ledge spindle to the westward.

On the above courses, to enter Small Point Harbor.—On the N. ¾ W. course for Flag Island, when you are exactly in line between Bald Head and The Brown Cow,—the former bearing E. by S. ⅝ S., distant five-eighths of a mile, and the latter W. by N. ⅝ N., distant about one mile,—with a depth of eight fathoms and a quarter, steer NE. by N. ½ N. into the harbor, passing to the westward of Gooseberry Island Ledge, to the eastward of Middle Ledge, to the westward of Pitch Pine Ledge, and carrying not less than three and a half fathoms water. Anchor anywhere between the buoy on

Pitch Pine Ledge and the northern side of the harbor, in from three and a half to five fathoms water, hard bottom. The passage into the inner harbor is not safe for strangers. *Sailing Directions---New Meadows River.*

On the above courses, if you wish to enter Horse Island Harbor, when abreast of the northern end of The North Blacksnake, in eight and a half fathoms, haul up to the eastward, (steering for the shore,) and keep midway between the southern end of Horse Island (called **Horse Island Point**) and the Blacksnake until the harbor opens, when steer up the middle of the cove, anchoring at discretion. On the easterly course there is not less than eight fathoms, and to the anchorage not less than four. This is a very comfortable harbor of refuge in bad weather, as the holding-ground is good and the anchorage safe and well protected.

But, if bound up to Cundiz Harbor, when past Jamison's Ledge spindle, and the southern end of Flag Island bears **W.** $\frac{3}{4}$ **N.**, steer **N.** about midway between Bear Island and Fort Point, carrying not less than four and a quarter fathoms, and continue this course until the point is exactly abeam, bearing **W.** and about three hundred yards off. Cundiz Harbor will now be completely open to the northward, and, if you wish to anchor in it, alter the course to the eastward enough to keep off the eastern shore, (about **N.** $\frac{1}{2}$ **E.**,) and, rounding the point at about one hundred and fifty yards distance, anchor in from three to five fathoms, mud and clay.

Or, if bound up river, when Fort Point bears **W.**, as above, steer **NE.** by **N.**, keeping the eastern shore best aboard, and carrying not less than twelve fathoms, until you are past the middle of Sheep Island and the southern end of Long Island bears **N.** $\frac{3}{8}$ **E.**, with eight fathoms, soft bottom. This clears Sheep Island Ledge. Now steer **N.** by **E.** $\frac{1}{8}$ **E.**, nearly for Merrit's Island, and continue this course until abreast of the middle of Bragdon's Island, which leave to the westward, (as close as you desire, for it is bold-to,) and steer **NW.** by **N.** $\frac{1}{4}$ **N.** for Woodward's Point, carrying not less than four fathoms water. This course leads along the eastern shore of the river, which is the boldest. On this course, when the northern point of Bombazine Island bears **S.** by **W.** $\frac{1}{2}$ **W.** and you are off the entrance to Simon's Gurnet, steer **N.** by **E.** $\frac{1}{2}$ **E.**, keeping the northwestern shore aboard to avoid The Middle Ground, and anchor half a mile above Woodward's Point, in sixteen feet at low water. Above this it is not safe for strangers to go. A pilot can be obtained on either shore of the river who will direct you up to Howard's Point or above it.

DANGERS

IN APPROACHING AND ENTERING NEW MEADOWS RIVER.

II. ***Coming from the Westward.***—The first obstruction met with by vessels coming from the westward and bound into New Meadows River is Lumbo's Ledge, an extensive piece of shoal ground, with only one very shoal spot upon it, and that marked by a buoy. Lumbo's Ledge is four and three-quarter miles **E.** $\frac{1}{2}$ **N.** from Half-Way Rock Light-house, and **SW.** from Mark Island, two miles and three-quarters distant. There is one spot upon the ledge which has eleven feet upon it at low water, and this is marked by a spar-buoy painted red and and black in horizontal stripes. Vessels bound into New Meadows leave this buoy to the southward. *Lumbo's Ledge.*

Two miles **N.** $\frac{1}{4}$ **E.** from Lumbo's Ledge buoy is *Bold Dick*, bare at one-quarter ebb. It is a small rock, lying **W.** by **S.** $\frac{5}{8}$ **S.**, five-eighths of a mile distant from The White Bull, and **S SW.** from the centre of Ragged Island, distant five-eighths of a mile. It is not buoyed, but nearly always shows itself by breakers.

When past Bold Dick, The White Bull will be seen bearing about **E.** by **N.**, and this is the turning point for this channel. It is a rocky islet, very much like The Brown Cow in appearance, is bold-to on all sides except on the northern shore, and lies **W.** $\frac{1}{2}$ **N.** from Mark Island, distant one mile and an eighth, and half a mile **SE.** $\frac{3}{4}$ **S.** from Ragged Island. *The White Bull.*

Rounding The White Bull, a ledge, bare at half-tide, nearly in range with Mark Island, will be passed well to the eastward. This is Mark Island Ledge, or, as it should be called, to distinguish it from the other ledge of the same name, *Woody Mark Island Ledge.* It is five hundred and fifty yards **W SW.** from Woody Mark Island, and **E.** by **S.** $\frac{3}{4}$ **S.** from The White Bull, seven-eighths of a mile distant. It is not buoyed, but always shows itself by breakers. *Mark Island Ledge.*

Little Bull Ledge is not in the way except for vessels beating in or out. It is a bare rock, lying nearly half a mile **N.** $\frac{1}{4}$ **W.** from The White Bull and a quarter of a mile **NE.** by **E.** from the southern extremity of Ragged Island. There are from four to eight fathoms water on all sides of it, but it should not be approached from the southward and southeastward nearer than an eighth of a mile. *Little Bull Ledge.*

Passing Little Bull Ledge, the next danger met with is also on the western side of the channel, and is called The Sisters Ground. It is a mass of shoal ground and detached ledges, lying **SE.** from The Sisters, and having from five to twelve feet upon them at low water. They occupy nearly the whole space between the northern edge of this channel and The Sisters and are not buoyed; but a buoy has been recommended to be placed upon them. The southeastern extremity of The Sisters Ground lies three-quarters of a mile **E NE.** from the southern end of Ragged Island; the same distance **NE.** by **N.** ¼ **N.** from The White Bull; and one mile **NW.** ½ **N.** from Mark Island. Strangers must beware of these ledges, and in beating must not stand to the westward of The White Bull bearing **SW.** ½ **S.** At night keep Half-Way Rock Light-house open to the southward of Ragged Island.

The Sisters Ground.

After passing The Sisters Ground the channel is clear to Flag Island, and the course leads between that island and Long Ledge. This is composed of two narrow, bare, rocky islets, lying in a **N NE.** and **S SW.** direction, joined at low water, and each about three hundred yards long. They are tolerably bold-to, except that off the northern end of the upper islet there is *a rock awash* at a distance of one hundred and twenty-five yards. There is good water on each side of Long Ledge, but the main channel leads between it and Flag Island, which is half a mile **SE.** from it.

Long Ledge.

The northern end of Flag Island must not be too closely approached. On the contrary, vessels should keep over towards Long Ledge; for there is a sunken ledge, with seven feet at mean low water and five at low spring tides, which lies two hundred yards **NW.** from the northern point, and is known as *Northwest Ledge*, or *Flag Island Northwest Ledge*. Several vessels have struck upon this ledge, as it is not buoyed and is very much in the way.

Shoals North of Flag Island.

Passing Northwest Ledge you must avoid the shoals north of Flag Island, which extend from the northern point in a **N NE.** direction nearly three-quarters of a mile, and are not buoyed. There are four distinct shoals with deep water between them, and the soundings on them vary from ten to fifteen feet.

Goudy's Ledge, already described, (see pages 413–414,) is the next obstruction met with, and here the western channel joins the eastern. Goudy's is bare at half-tide, lies five-eighths of a mile **N.** ¼ **E.** from Flag Island and three-eighths of a mile **S.** ¼ **E.** from Rogue Island, and there is good water on all sides of it. An iron spindle, painted red, with cage on top, is placed on the southern point of the rock, and vessels using this channel pass to the westward of it.

Goudy's Ledge.

The western channel now joins the eastern and the obstructions in the river are common to both. (See page 414.)

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING NEW MEADOWS RIVER.

II. ***Coming from the Westward.***—Pass half a mile to the southward of Half-Way Rock, in from sixteen to twenty-four fathoms water, and when abreast of the light-house steer **E NE.** for a little over six miles and three-quarters, carrying not less than twelve fathoms, until the middle of the highest part of The White Bull bears **NW.** and is in range with the western part of Ragged Island. Now haul up **NE.** by **N.** ⅛ **N.**, and continue this course, with not less than eleven fathoms, until you are past Rogue Island and Fort Point bears **W.**, about three hundred yards distant. Then steer **NE.** by **N.**, (keeping the eastern shore a little the best aboard and carrying not less than twelve fathoms water,) and continue this course until you are past the middle of Sheep Island and the southern end of Long Island bears **N.** ⅛ **E.**, with eight fathoms, soft bottom. This clears Sheep Island Ledge. Now steer **N.** by **E.** ⅛ **E.**, nearly for Merrit's Island, and proceed as directed on page 415.

Coming from the Westward, bound into Horse Island Harbor.—From off Half-Way Rock steer **NE.** by **E.** ½ **E.**, when the peculiar bald spot on top of the wooded hill, called **Tottman's Bumper,** will be seen over Carrying-Place Head, bearing about **E NE.** This course leads past Bold Dick and between The White Bull and Mark Island, but close to the former, and carries not less than ten fathoms water. Continue it until abreast of Jamison's Ledge spindle, which leave to the northward and westward, and steer **N.** by **E.** ½ **E.**, with not less than six fathoms, until you are up with the northern end of The North Blacksnake. Now haul to the eastward, passing midway between Horse Island Point and The Blacksnake with not less than seven fathoms, and so continue until you fairly open the harbor. Then steer up the middle of the passage and anchor according to draught, in from two to six fathoms water, sticky bottom.

Vessels may pass between The White Bull and Ragged Island with six fathoms water and enter New Meadows River; or, may go to the northward of Ragged Island and pass between it and Black-

snake Ledge with eight fathoms water. But neither of these channels should be attempted by strangers, and the chart is the best guide for them.

Vessels beating into New Meadows River must remember to give the southern point of Wood Island a berth of one-third of a mile; not to stand across the northern end of Flag Island until to the northward of Goudy's Ledge; in approaching Horse Island from the westward, not to go to the eastward of Carrying-Place Head bearing S. ¼ E.; not to stand too close to Hen Island in Winnegance Bay; and to beware of Bragdon's Rock and the eastern side of the northern end of Long Island. All the other shores are bold-to and may be closely approached.

QUOHOG BAY.

Next to the westward of the New Meadows is the entrance to Quohog Bay. This bay is formed by a deep indentation in the southern shore of Great Island and is an excellent harbor of refuge, although otherwise of no commercial importance. The entrance is between Yarmouth Island on the east and Long Point, the southwestern point of Great Island, on the west.

Yarmouth Island.

Yarmouth Island is thinly wooded, bold and rocky, surrounded by extensive shoals, bare rocks and ledges. It is the first island met with to the westward of West Cundiz Point,—being only half a mile from it; and between it and the point is a broad passage, with seven fathoms water, leading into Ridley's Cove, an excellent anchorage in all winds except those from the southward and southwestward. Yarmouth Island is bluff and precipitous on its eastern face,—being one hundred and twenty feet high and descending abruptly to the water's edge,—but on its western and southern sides the slope is very regular and gradual. It is nearly three-quarters of a mile square.

Ridley's Cove.

Ridley's Cove, which is contained between the western shores of Cundiz Point and Yarmouth Island, affords an excellent anchorage, and is nearly a mile long and three-eighths of a mile wide. Anchorage in from five to seven fathoms may be had in any part of the cove. Its northern side is bounded by two islets,—the one to the eastward, close to the Great Island shore, called **Great Hen Island**, and the westernmost one known as **George's Island.** A small islet, called **Bush Island,** which lies close to the northeastern point of Yarmouth Island, forms the western boundary of a narrow but excellent passage, with not less than twenty-one feet, from Ridley's Cove to Quohog Bay.

Flash Island, a small rocky islet, lying on the western side of the entrance to Ridley's Cove, is two hundred yards SE. from the southeastern point of Yarmouth Island and surrounded by shoals. It should receive a berth of one hundred and fifty yards to the westward.

Jenny's Island.

Jenny's Island, a rocky islet, lies half a mile SW. from Cundiz Point and the same distance NW. by N. ¼ N. from the northern end of Long Ledge. Vessels bound into Quohog Bay pass to the westward of it; but there are seven and eight fathoms on all sides of it and it is tolerably bold-to.

Ragged Island.

Several islands and islets lie off the approaches to Ridley's Cove and Quohog Bay. Coming from the eastward, outside of all danger, we first meet with Ragged Island, a rocky island about half a mile long and a quarter of a mile wide, lying NNW. and SSE. Its southeastern end is a steep bluff one hundred feet high, with the summit covered with a stunted growth of fir. The rock of which the island is formed has been bleached by exposure to a peculiar whitish color, which, dotted here and there with a solitary spruce or fir tree, gives the southern face a peculiar appearance.

The course to enter Quohog Bay from the eastward leads along the western shore of Ragged Island; and the high grassy island seen two or three miles to the westward is **Bailey's Island.** The land to the northwestward is **Orr's Island.** The course leads about **NW. by N.,** between dangerous ledges and among sunken reefs, and the first island met with to the northward of Ragged Island is Two-Bush Ledge.

Two-Bush Ledge.

When past the northern end of Ragged Island there will be seen to the northward a group of rocky islets, partly bare and partly wooded, in range with Yarmouth Island. The southernmost of these is Two-Bush Ledge, a bare rock about three hundred yards long, lying NNE. from Ragged Island at a distance of one mile and a quarter. It is twenty feet high and bare of all vegetation and is tolerably bold-to. The channel leads to the westward of Two-Bush, between it and a long line of bare rocks known as **Cedar Ledges.**

Elm Islands.

Two hundred yards to the northeastward of Two-Bush are two other islets composing the group called Elm Islands. The easternmost islet is the larger, and is three hundred yards long, forty feet high and bare. The other rock is much smaller, about twenty feet high, with a few trees upon it. A small, round, bare rock lies off the southern end of the larger islet, about one hundred yards distant. Shoal water extends off on their southern sides a distance of six hundred yards, but on their western faces they are bold-to.

Long Point.

Passing to the northward of Elm Islands you will enter Quohog Bay between the low shores of Yarmouth Island and a long, low, cleared point, with many bare rocky islets and ledges lying to the southward of it. This is the southwestern point of Great Island and is called Long Point. The land to the westward and to the northward of this point rises very gradually to a height of about eighty feet, and about a quarter of a mile to the northward a bluff head, eighty feet high, extends into the bay. Behind this, to the northward, rise the high lands of Great Island, diversified with cleared and cultivated slopes, settlements and thickly wooded hills.

Bare ledges, known as the **Ballast-Stone Ledges**, appear to the eastward, off the southern shore of Yarmouth Island; and still farther to the eastward will appear the little bare rock known as Flash Island, on the western side of the entrance to Ridley's Cove.

Pole Island. On entering the bay there will be seen ahead, bearing nearly **N NE.**, an island in mid-channel, rising to a considerable height. This is Pole Island, one hundred feet high, and bare of trees. North and south of it bare ledges extend to a distance, each way, of nearly half a mile; but its eastern shores are bold-to. It is one and five-eighths miles above Long Point and exactly in mid-channel.

When past Yarmouth Island a passage will open, leading along its northern shore to the eastward, into Ridley's Cove.

The channel of Quohog Bay leads on either side of Pole Island; and nearly three-quarters of a mile above the island lies another,—a small bare islet exactly in the middle of the channel. It is called **Centre Island**, and, like Pole Island, may be passed on either hand.

Snow's Island. Here the eastern shore of the bay spreads away to the southward and eastward, and then turning again to the northward, forms at the head of the bay a wide cove with deeply indented shores, and obstructed by a group of islets surrounded by ledges and shoals. The westernmost of these islets, which is the largest, is called Snow's Island, and is a quarter of a mile **E.** of Centre Island. The space between Snow's and Great Island is occupied by a group of four rocky islets,—the northernmost of which is the largest and is called **Ben's Island.**

The bay widened by the curve of the eastern shore is here three-quarters of a mile wide; but the best water is to the westward of the islands. Strangers should not attempt to go to the eastward of Snow's Island.

Three-eighths of a mile above Snow's Island is the northern shore of the bay, which is indented by no less than four narrow coves. The easternmost is called **Rich's Cove.** Next to the westward is a long and very narrow cove, called **Brick-yard Cove.** Then comes **Mill Cove**; and the westernmost, which is the largest and longest of the four, is called **Orr's Cove.**

Of these four, Mill Cove and Orr's Cove are safe for strangers. The others are too much obstructed, and are dangerous for any to attempt except those familiar with the locality.

DANGERS

IN APPROACHING AND ENTERING QUOHOG BAY

I. ***Coming from the Eastward.***—The best passage into this bay from the eastward is along the southwestern shores of The White Bull and Ragged Island. The first obstruction met

Bold Dick. with by vessels using this passage, after passing The Brown Cow, is Bold Dick, a small ledge, lying **W.** by **S.** $\frac{3}{8}$ **S.**, five-eighths of a mile from The White Bull, and the same distance **S SW.** from the centre of Ragged Island. It is bare at one-quarter ebb, is not buoyed, but is quite bold-to, and always shows itself by breakers. (See page 415.)

When between The White Bull and Bold Dick, a large ledge will show itself, except at high water in very calm weather. This is Saddle-back Ledge, lying half a mile **W SW.**

Saddle-back Ledge. from the southern end of Ragged Island and a third of a mile **NW.** by **N.** $\frac{1}{2}$ **N.** from Bold Dick. It is bare at half-tide, and is tolerably bold-to, except on the southern side. Vessels must be very careful in standing across between Bold Dick and this ledge; for although there is good water between them, the passage is rendered dangerous by *a detached rock, bare at low water*, lying one hundred and seventy-five yards **SE.** from the Saddle-back. It is not named, and Saddle-back Ledge is not buoyed. There is another dangerous rock on the eastern side of the channel, directly abreast of Saddle-back Ledge. It lies two hundred and fifty yards **SW.** by **W.** $\frac{1}{4}$ **W.** from the southwestern end of Ragged Island, *is bare at low tide*, and surrounded by deep water.

Passing these ledges, the next obstruction lies well on the western side of the channel, in the way

Round Rock. of vessels bound in from the westward; but is only dangerous to vessels using the eastern channel when beating in or out. It is called Round Rock, is bare at half-tide and very bold-to, lies **W.** by **S.**, seven-eighths of a mile distant from the centre of Ragged Island, and **NW.** by **W.** $\frac{1}{4}$ **W.**, half a mile from Saddle-back Ledge. It is not buoyed, but shows itself at all times of tide except in very calm weather.

When abreast of the middle of Ragged Island the channel turns to the northeastward and leads between two dangerous ledges lying nearly **E.** and **W.** of each other. The shoal to the northeast-

Blacksnake Ledge. ward is Blacksnake Ledge, formed by a reef or line of bare rocks extending in a **N.** by **E.** and **S.** by **W.** direction three hundred yards, and having ledges bare at low water surrounding them. The whole extent of the shoal in a **N.** by **E.** direction is exactly half a mile. The southern end of Blacksnake Ledge is a quarter of a mile **N.** from the northern end of Ragged Island and a little over half a mile **E.** from the southern end of Middle Ground Rock, which lies abreast of it, on the western side of the channel. The passage between them is perfectly clear, as is also that between the Blacksnake and the northern shore of Ragged Island. This ledge is not buoyed, but is always visible in the day-time.

Opposite to Blacksnake Ledge is Middle Ground Rock, an extensive piece of shoal ground, obstructing alike the entrance to The Gurnet and to Quohog Bay. It covers an area

Middle Ground Rock. of half a mile **N NE.** and **S SW.** by the same distance **W.** by **S.** and **E.** by **N.**; and is mostly bare at low water and not buoyed. The southeastern end of this shoal is a

little over half a mile W. by N. ½ N. from the northern end of Ragged Island, and about the same distance W. ½ S. from the southern end of the Blacksnake.

Cedar Ledges lie four hundred yards to the northeastward of the northern end of Middle Ground Rock. They are a number of bare islets and rocks extending for more than half a mile in a N NE. and S SW. direction on the western side of the channel, and surrounded by ledges bare at low water. The whole extent of the obstruction is over a mile in a N NE. and S SW. direction and a third of a mile in an E SE. and W NW. direction. The southern end of these ledges is three-quarters of a mile N. by W. ¾ W. from the northern end of Ragged Island, and the northern point is not quite half a mile S SW. from Long Point. Although there are seven fathoms water between Middle Ground Rock and these ledges, and also between them and Great Island, strangers should not attempt either passage. *Cedar Ledges.*

Vessels beating in or out must, when passing across the northern end of Cedar Ledges, give them a berth of three-eighths of a mile to the southward. When approaching the southern end of the shoal they must not attempt to cross between it and Middle Ground Rock, but must go about as soon as the southernmost of the bare rocks bears N. by E.

On the eastern side of the channel, a little over a quarter of a mile NE. by N. from the Blacksnake and exactly a quarter of a mile S SW. from Two-Bush Ledge, is a small bare rock called Yellow Rock. It is quite bold-to, and is only in the way of vessels beating in or out. There is a good channel between it and Two-Bush, and also between it and the Blacksnake. *Yellow Rock.*

From Yellow Rock the channel leads to the northeastward between Two-Bush Ledge and Cedar Ledges; and on approaching the entrance to the bay there will be seen to the eastward a great mass of shoal ground, composed of bare rocks, reefs and sunken ledges, extending from the southwestern end of Yarmouth Island almost to Elm Islands, a distance of three-quarters of a mile, and called Yarmouth Island Ledges. They lie N. and S. between Yarmouth Island and Elm Islands, and are formed by six or seven distinct ledges grouped closely together, some always bare, some bare at half-tide, some bare at low water, and some with from two to ten feet upon them. To avoid them, in beating, (as they are not buoyed,) do not go to the eastward of Two-Bush bearing S. by W. ¾ W. *Yarmouth Island Ledges.*

After passing Yarmouth Island Ledges the channel is clear to abreast of the middle of Yarmouth Island, when there will be seen to the northward and westward a line of bare rocks extending to the southward from the southern end of Pole Island. These are Pole Island South Ledges, extending SW. from Pole Island for half a mile, and tolerably bold-to. In the line of, and at the distance of five hundred yards from, the southwestern extremity of the bare part of these ledges there lies *a sunken rock* exactly in mid-channel, with thirteen feet at mean low water. There is a good channel on either side, perfectly unobstructed, and both of about equal width. Pole Island itself is bold-to, and may be approached quite closely with five fathoms. *Pole Island South Ledges.*

When abreast of the northern end of Pole Island another line of bare ledges will be seen extending to the northward of the island. These are Pole Island North Ledges, a reef of bare rocks extending NE. from the northern end of the island for a third of a mile. They are also bold-to like the South Ledges, and the channels on both sides of them are equally good. Above these ledges there are no obstructions in the channel of the bay. It may be necessary, however, to state that vessels drawing over twelve feet passing on the western side of Centre Island should give it a berth of two hundred and fifty yards. *Pole Island North Ledges.*

Vessels must not go to the eastward of Snow's Island.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING QUOHOG BAY.

I. *Coming from the Eastward.*—Bring Bald Head to bear NE. and Half-Way Rock Light-house W. ¼ S., with thirteen fathoms, hard bottom, and steer NW. ¼ W. for the middle of Pond Island. Continue this course past The White Bull, leaving Bold Dick and Saddle-back Ledge well to the westward, and carrying not less than ten fathoms, until Half-Way Rock Light-house bears SW. ⅞ W. and The Sisters (two small, bare, rocky islets to the northeastward of Ragged Island, about three-quarters of a mile distant) have just opened clear of the northern end of Ragged Island, when there will be sixteen fathoms, soft bottom. Now steer NE. by N. ⅜ N. for Pole Island, and continue this course, with not less than seven fathoms, until you are abreast of the middle of Yarmouth Island and about two hundred and fifty yards from the southern end of Pole Island South Ledges. Now, if wishing to anchor in the bight, edge over towards the Yarmouth shore, steering about NE. ½ E., just so as to give the South Ledges a small berth, and anchor anywhere in the harbor formed by Pole Island and Great Island on the N. and E. and Yarmouth Island on the S., in from two to four fathoms, soft bottom.

Sailing Directions--Quohog Bay. *But, if bound up the bay,* keep either shore aboard, only taking care to give the South and North Ledges a berth of fifty or sixty yards, and when past the North Ledges round the point on the eastern shore, and anchor between it and Snow's Island, in from twelve to twenty-one feet water, sticky bottom. *Or, give Centre Island a berth,* and anchor under the northern shore of the bay, or in Orr's Cove, in from ten to eighteen feet.

Through the channel to the westward of Pole Island eight fathoms may be taken as far as the northern end of the island, and beyond that not less than four fathoms. Through the eastern channel five fathoms can be carried as far as the northern end of Pole Island, and not less than four as far as Centre Island.

II. ***Coming from the Southward, to pass to the westward of Bold Dick, and between Saddle-back Ledge and Round Rock, and enter Quohog Bay.***—When Half-Way Rock Light-house bears **W.**, distant two and three-quarter miles, and Woody Mark Island **NE.** by **E.** ¼ **E.**, (in range with Carrying-Place Head,) Mark Island Monument will bear **NW.** by **N.** ¼ **N.** and Pole Island **NE.** by **N.** ⅝ **N.**, and there will be about twenty-eight fathoms water. Steer for Pole Island, which will lead you safely, with not less than seven fathoms, between Round Rock and the Saddle-back, and up the middle of the bay until you are abreast of the middle of Yarmouth Island and about two hundred and fifty yards below the southern end of South Ledges. Then follow the directions given above for anchoring in the bight or proceeding up the bay.

Vessels may also enter The Gurnet by the eastern passage into Quohog Bay, passing to the westward about midway between Long Point Rocks and the northernmost bare rock of the Cedar Ledges; but it is a channel that should never be attempted by strangers. Seven fathoms may be taken through it.

DANGERS

IN APPROACHING AND ENTERING QUOHOG BAY.

II. ***Coming from the Westward.***—There are three commonly used channels leading from the westward into Quohog. The first and most southerly leaves Half-Way Rock to the northward and passes clear of all dangers until Pole Island is brought to bear **NE.** by **N.** ⅝ **N.** The next to the northward leads to the northward of Half-Way Rock, and the first danger met with

Webster Rock. is Webster Rock. This dangerous ledge has eight feet at low spring tides, and lies **N.** from Half-Way Rock at a distance of three hundred and fifty yards. Between it and the rock it is not safe to go, as the ground is shoal and broken. This ledge is marked by a black spar-buoy (No. 7) anchored in five fathoms water on the northern end of the shoal ground. It is a very long spar, and can be seen from a considerable distance.

Webster Rock was so called from the circumstance of the steamer "Daniel Webster" striking on it in the summer of 1856.

Drunker's Ledges is an extensive piece of shoal ground lying between the bearings of **NE.** by **N.** and **N NE.** from Half-Way Rock, at a distance of two miles. It bears from Webster Rock buoy between **NE.** ½ **N.** and **NE.** by **N.** ½ **N.**, lies between the bearings of **S.** ½ **E.** and **S.** ½

Drunker's Ledges. **W.** from Mark Island Monument, and is distant from it one mile and a quarter. There are two distinct ledges lying **SE.** ½ **E.** from each other, with a channel, a quarter of a mile wide and with fourteen fathoms water, between them. It is not at all an unusual thing for vessels to pass between them at low water. Both rocks are always visible at half-tide,—the northernmost being bare at that time and the southernmost showing by breakers. The latter has four feet at mean low water and at low spring tides it is nearly bare. Off the western end of the northernmost ledge, in five fathoms at low water, is placed a spar-buoy painted red and black in horizontal stripes.

The third channel from the westward leads between Drunker's Ledges and a sunken ledge nearly three-quarters of a mile to the northeastward of it, called Mark Island Ledge, with three feet upon it at low water and sometimes awash. It bears **SE.** by **S.** ⅝ **S.** from Mark Island Monu-

Mark Island Ledge. ment, distant nearly three-quarters of a mile, and **NE.** by **N.** ¼ **N.** from Half-Way Rock, distant two and three-quarter miles. There are from four to nineteen fathoms water all around it, and vessels may pass on either side of it by giving it a good berth. A black spar-buoy (No. 5) marks this ledge, and it is placed in four fathoms on the northwestern side of the rock.

There is still another channel, very much used by fishermen, yachts and steamers, leading to the northward of Mark Island Ledge, between it and Jaquish Island, a small, low, rocky

Jaquish Island. island lying off the southern end of Bailey's Island, from which it is separated by a narrow passage full of ledges, called **Jaquish Cut,** about two hundred yards wide.

The island has a grove of spruce and fir on its summit occupying about one-third of the surface. A bare rocky islet, lying **SE.** from Jaquish, and one hundred and fifty yards from it, is called **Little Jaquish Island.**

In this inshore passage the first danger met with after passing Mark Island Ledge is Jaquish Ledge, a long point making off from the southwestern end of Jaquish Island to a distance of two hundred and seventy-five yards. It is nearly all bare at low water, is quite bold-to, and is not buoyed. The channel between it and Mark Island Ledge is five-eighths of a mile wide. ***Jaquish Ledge.***

After passing Jaquish Island, the next ledge met with is Charity Ledge, and is not dangerous to light-draught vessels except at low water, as there is fifteen feet on it at mean low tides. It lies half a mile **E.** by **N.** from Little Jaquish Island and a mile and a quarter **SW. ¼ W.** from Pond Island, is not buoyed, and is quite bold-to. After passing this danger, the next one met with is formed by a line of bare rocks extending in a **N NE.** and **S SW.** direction on the northern side of the channel. These are Pond Island Ledges, which extend off half a mile from Pond Island and are surrounded by shoal water for one hundred and fifty yards to the southward of the bare rocks. They are not buoyed. **Pond Island** is that bare rocky island which appears bearing **NE.**, and nearly two miles distant, when passing to the eastward of Jaquish Island and looking up into The Gurnet. It is about seven hundred yards long and three hundred and fifty wide, is surrounded by shoals and sunken rocks, and lies in the middle of the passage into The Gurnet. ***Charity Ledge.*** ***Pond Island Ledges.***

After passing Pond Island Ledges the channel leads towards the northern end of Ragged Island, and, passing between Round Rock on the south and Middle Ground Rock on the north, turns to the northeastward and enters Quohog Bay.

Round Rock obstructs equally all the channels from the westward, and is bare at half-tide and very bold. It bears **W.** by **S.** from the centre of Ragged Island, from which it is distant seven-eighths of a mile. From this rock Pond Island bears **N NW.**, nearly one mile distant. ***Round Rock.***

Middle Ground Rock is an extensive shoal obstructing the entrance to Quohog Bay and The Gurnet. It lies **N NE.** and **S SW.**, covers an area of half a mile square, is mostly bare at low water, and is not buoyed. The southeastern end of this shoal is a little over half a mile **W.** by **N. ½ N.** from the northern end of Ragged Island, and about the same distance **W. ½ S.** from the southern end of the Blacksnake. ***Middle Ground Rock.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING QUOHOG BAY.

III. ***From the Westward, by the outside passage, to the southward of Half-Way Rock.***—Pass half a mile to the southward of Half-Way Rock; and when the light-house bears **N.** by **W. ¼ W.**, and you are in twenty-four fathoms water, steer **E NE.** until Mark Island Monument bears **NW.**, (carrying not less than twenty fathoms,) when Pole Island will bear **NE.** by **N. ⅓ N.**, and there will be fifteen fathoms, soft bottom. Then steer for Pole Island, and you will pass safely up the bay to Yarmouth Island with not less than seven fathoms. When abreast of the island, and about two hundred and fifty yards from Pole Island South Ledges, give the latter a berth, edge over to the eastern shore, and anchor in the bight in from two to four fathoms, soft bottom. Or, following the directions given on page 420, keep on up the bay, and anchor at pleasure in from two to three and a half fathoms. This channel is the best for strangers.

IV. ***From the Westward, by the channel between Half-Way Rock and Drunker's Ledge.***—Pass five-eighths of a mile to the northward of Half-Way Rock. This clears Webster Rock,—leaving the buoy more than a quarter of a mile to the southward. When this buoy and the light-house are in range on a bearing of **S.** by **E.**, and you are in about nineteen fathoms, steer **E NE.**, (heading for the passage between The White Bull and Ragged Island,) and carrying not less than twelve fathoms water. When Mark Island Monument bears **W.** by **N. ½ N.**, Pole Island will bear **NE.** by **N. ⅓ N.**, and there will be twenty fathoms, sticky bottom. Now steer for Pole Island on this course, and it will lead you safely up the bay, with not less than seven fathoms, until close up with South Ledges, when give them a berth to the eastward and pass up the bay according to directions given on page 420; or, give the South Ledges a berth to the westward, edge over towards the eastern shore, and anchor in the bight in from two to four fathoms, soft bottom.

V. ***From the Westward, by the channel between Drunker's and Mark Island ledges.***—To use this channel, bring the northern end of Ragged Island to bear **E.** by **N. ½ N.**, Mark Island

Sailing Directions--Quohog Bay. Monument **NE.** ½ **N.**, and Half-Way Rock Light-house **S.**, one mile and three-quarters distant, when there will be twenty-five fathoms, hard bottom. Then steer **E.** by **N.** ½ **N.** for the northern end of Ragged Island, passing about midway between Drunker's and Mark Island ledges; to the southward of Charity Ledge a quarter of a mile; to the northward of Round Rock two hundred and fifty yards; and to the southward of Middle Ground Rock more than a quarter of a mile, and carrying not less than six fathoms water. When within half a mile of Ragged Island, in fifteen fathoms, soft bottom, Pole Island will bear **NE.** by **N.** ⅓ **N.** Steer that course, which will lead you safely up the bay, with not less than seven fathoms, to within two hundred and fifty yards of South Ledges, when follow the directions given on page 420.

VI. ***From the Westward, by the inshore channel, between Mark Island Ledge and Jaquish Island.***—The use of this channel presupposes having come through the bay by the passage among the islands. To enter it, bring Mark Island Monument to bear **NE.** by **E.** ½ **E.**, one mile distant, Half-Way Rock Light-house **S.**, and the western end of Eagle Island **N.**, three-quarters of a mile distant, when there will be from twelve to fifteen fathoms, dark green mud. Then steer **E.** ½ **N.**, nearly for the southern end of Ragged Island, leaving Jaquish Island nearly a quarter of a mile to the northward and Mark Island Ledge the same distance to the southward, and carrying not less than seven fathoms water. Continue this course until the Monument is just shut in behind Jaquish Island and Half-Way Rock Light-house bears **SW.** ½ **W.**, with seventeen fathoms, soft bottom. Then Pond Island will bear **N NE.** and the ledges will be in range with it, distant half a mile in a **N NE.** direction. Now steer **E.** by **N.** ½ **N.** for the northern end of Ragged Island, carrying not less than six fathoms, and leaving Round Rock two hundred and fifty yards to the southward and Middle Ground Rock a quarter of a mile to the northward. When Pole Island bears **NE.** by **N.** ⅓ **N.**, steer that course, and continue it up the bay, with not less than seven fathoms, until you are within two hundred and fifty yards of the South Ledges. Give them a berth to the eastward, and continue up the bay according to the directions given on page 420; or, give them a berth to the westward, and steer **NE.** ½ **E.** into the bight, and anchor at discretion.

THE GURNET.

The Gurnet is a long and narrow cove contained between the southern part of Great Island and Orr's Island. There was formerly a strait or passage between Great Island and the northeastern end of Orr's Island; but it is now bridged and all communication cut off except for small boats. The Gurnet is two miles long, half a mile wide at its mouth, and gradually contracts until at its head it is not quite a quarter of a mile in width. It is of no importance except as a harbor of refuge in northerly storms, and of little then, as vessels prefer to run into Stover's Cove or Harpswell Harbor, or to anchor in Horse Cove on the northern end of Bailey's Island.

Orr's Island. Orr's Island, forming the western side of the cove, is a large island of considerable height, lying **NE.** and **SW.**, and about three miles long. It is pretty thickly settled, and the surface is diversified by wooded slopes and cleared and cultivated lands studded with houses. The woodlands are mostly near the southern end, but wood is being rapidly cut and the appearance of the land changing accordingly. The northern end is indented by a long, shallow and very narrow cove, called **Long Cove**, which splits the northern side into two small peninsulas. The easternmost of these is joined at its extremity by a bridge to Great Island, thus closing the head of The Gurnet. This northeastern point is bluff and steep.

Beal's Cove. On the western side, Orr's Island is indented by two coves,—one near the middle of the island, large and wide, but very shallow, and called **Reed's Cove.** The other is small, almost entirely bare at low water, opens into the island about a mile above its southwestern point, and is called Beal's Cove. Neither is of any importance. On the southern side of the island there is a deep cove making into the land between the southeastern and southwestern points, nearly half a mile long and a third of a mile wide at its mouth. This is **Lowell's Cove**, and affords capital anchorage in from two to four fathoms, soft muddy bottom.

Bailey's Island. Orr's Island is separated by a narrow and crooked passage, called Wille' Straits, from a large, well-settled and cultivated island, called Bailey's Island, two miles long, but very narrow. It lies **NE.** by **N.** and **SW.** by **S.**, the upper end mostly bare of trees and under fine cultivation; the southern end showing a bare and bluff appearance, and the summit of the bluff covered with a thick grove of spruce. Houses dot the cleared surfaces, and the highest land on the island is sixty feet above sea-level.

Wills' Straits. On the north, Bailey's Island is separated from Orr's Island by a passage three hundred and fifty yards wide, called Wille' Straits, leading into Harpswell Sound, and very much used by fishermen and yachts; but it is so narrow, so extremely crooked and so full of ledges and rocks that no stranger, however light his draught, should ever dare to use it. As it is a very useful cut-off for light-draught vessels, such will always find pilots at

Stover's Cove or on Orr's or Bailey's islands. Six feet at low water can be brought through this passage; and at half-flood or high water a **N.** by **W.** or **S.** by **E.** course *made good* will carry a vessel safely through, but at low water no one course will do it.

Horse Cove.

On the northern shore of Bailey's Island a small but convenient anchorage is formed by Horse Cove. It is very easy of access,—there being no obstructions in it, and vessels may anchor in from two to four fathoms, soft bottom, and lie secure from all winds. It is very frequently used.

Jaquish Island. **Turnip Island.**

Off the southern end of Bailey's Island lies a small, low, rocky island, crowned with spruce and fir, called **Jaquish Island.** About three hundred yards to the westward of Jaquish Island is a small, bare, rocky islet, called Turnip Island. It is very bold-to on its eastern side, and Jaquish is bold-to on its western side. The passage between them leads into **Jaquish Cut,** and has seven fathoms water; but Jaquish Cut is shallow and dangerous except for light-draught vessels.

Orr's Island separates The Gurnet from Harpswell Sound; and Bailey's Island separates the approach to The Gurnet from Mericoneag Sound.

Mackerel Cove.

On its southwestern side Bailey's Island is indented by a large and deep but narrow cove, called Mackerel Cove. It is a great resort of fishermen, and affords good anchorage except in **SW.** winds, when it is somewhat rough. The holding-ground is good and the water deep,—five or six fathoms being the depth at the best anchorage.

Pond Island.

Pond Island, low, bare and rocky, is about six hundred yards long and three hundred broad, and lies in the middle of the passage towards The Gurnet, a little over three-quarters of a mile from the eastern shore of Bailey's Island, and a mile and a quarter to the northwestward of Ragged Island. It is surrounded by bare rocks and dangerous sunken ledges, and must receive a good berth on either hand.

Ram Island.

Nearly three-quarters of a mile **NE.** by **N.** from Pond Island is a smaller bare rock, called Ram Island, only about three hundred yards long and very narrow, and surrounded by shoals. There is a passage between it and Pond Island through which five fathoms may be taken, which is often used by fishermen; but no stranger should attempt it, as the dangerous **Middle Ground** and **Ram Island Ledges** obstruct it. They are sunken rocks and are not buoyed.

The eastern shores of The Gurnet, which are formed by a part of Great Island, are mostly wooded, and the land rises gradually to a height of eighty feet above high-water mark.

DANGERS

IN APPROACHING AND ENTERING THE GURNET.

Lumbo's Ledge.

I. ***Coming from the Eastward.***—The first obstruction met with in approaching The Gurnet from the direction of Cape Small Point is Lumbo's Ledge, an extensive piece of shoal ground, with only one very shoal spot upon it, and that marked by a buoy. It is four miles and three-quarters **E.** ½ **N.** from Half-Way Rock Light-house and two miles and a half **S.** ¾ **W.** from Ragged Island. Eleven feet at low water is found in one spot near the western end of the ledge, and here a spar-buoy, painted black and red in horizontal stripes, has been placed. The buoy is one hundred yards **S.** from the shoalest part.

Bold Dick.

Passing Lumbo's Ledge the course leads to the northwestward, and two miles to the northward is Bold Dick, bare at a quarter ebb. It is a small ledge, five eighths of a mile **W.** by **S.** ⅝ **S.** from The White Bull and the same distance **S SW.** from the centre of Ragged Island, and is not buoyed. This rock is very bold-to, and may be approached very closely (see page 418) with five fathoms water.

Saddle-back Ledge.

Passing to the westward of Bold Dick a quarter of a mile, and continuing the course to the northwestward, the next danger is Saddle-back Ledge, a large ledge, bare at half-tide. It is only three-eighths of a mile to the northward of Bold Dick and half a mile **W SW.** from the southern end of Ragged Island, and is tolerably bold-to. A good channel exists between it and Bold Dick, but is not available for strangers on account of *a rock, bare at low water*, which lies in the channel one hundred and seventy-five yards **SE.** from the Saddle-back, and is not buoyed.

Round Rock is half a mile **NW.** by **W.** ¾ **W.** from Saddle-back Ledge, and seven-eighths of a mile **W.** by **S.** from the centre of Ragged Island. It is bare at half-tide, very bold-to, and not buoyed; but, except in the calmest weather, shows itself by breakers at high water.

Pond Island Ledges.

As soon as you are past Round Rock, the course leads directly up the middle of The Gurnet in a northeasterly direction, passing to the westward of Middle Ground Rock and to the eastward of Pond Island Ledges, which latter are formed by a line of bare rocks extending from the southern extremity of Pond Island half a mile in a **N NE.** and **S SW.** direction. They are surrounded by shoal water extending one hundred and fifty yards to the southward of the bare rocks, are not buoyed, but are tolerably bold-to on their eastern side. Pond Island itself is surrounded by shoals, and its eastern shore should not be approached nearer than two hundred yards. (See page 421.)

Middle Ground Rock, nearly opposite to Pond Island, is an extensive shoal, partly dry at low water, but composed for the most part of sunken ledges. It covers an area of half a mile square, and, having no buoy, is a very dangerous obstruction both to Quohog Bay and The Gurnet. It is best avoided by knowing its bearings; but a vessel passing up with a fair wind, by keeping about four hundred yards from Pond Island, will go clear of everything in the best water. The southwestern end of Middle Ground Rock lies **W.** by **N.** $\frac{3}{4}$ **N.**, seven-eighths of a mile from the centre of Ragged Island, and **SE.** by **E.** $\frac{3}{8}$ **E.**, five-eighths of a mile from the southern end of Pond Island. (See page 421.)

Middle Ground Rock.

When past Middle Ground Rock the course leads between Cedar Ledges and Ram Island. Cedar Ledges are a number of bare rocks extending in a **N NE.** and **S SW.** direction more than half a mile,—their southern end being four hundred yards to the northeastward of the northern end of Middle Ground Rock. These bare rocks lie on the eastern side of the channel, between it and that leading into Quohog Bay; and bare ledges and sunken rocks extend off from them **N.**, **S.** and **W.**, so as to form a very dangerous piece of ground more than a mile long by a third of a mile wide. The southern end of Cedar Ledges is three-quarters of a mile **N.** by **W.** $\frac{3}{4}$ **W.** from the northern end of Ragged Island, and their northern point is not quite half a mile **S SW.** from Long Point. There is a passage between these ledges and Great Island, and another along their southern side, between them and Middle Ground Rock; but no stranger dare attempt either. (See page 419.)

Cedar Ledges.

Vessels beating through this channel must not approach the bare rocks on Cedar Ledges nearer than a quarter of a mile. The best way is to go about as soon as the eastern point of the entrance to The Gurnet bears **NE.** by **N.** $\frac{3}{4}$ **N.**, and continue so to do until abreast of the northern end of Ram Island. Then keep the western side of the passage, going about as soon as the highest part of the land on the eastern side of The Gurnet bears **NE.** by **N.** $\frac{1}{4}$ **N.**, to avoid the Sloop Ledges, a group of dangerous sunken rocks lying along the northwestern end of Cedar Ledges and close to them. They have three feet at low water and are not buoyed. From Ram Island the southwestern end of Sloop Ledges bears **E NE.**, distant nearly half a mile, and the shoal extends in a **NE.** by **N.** direction for over three-eighths of a mile towards **Oak Island**, the small rocky island off the southern end of Great Island. With a fair wind the course given below in the directions avoids all dangers; but, in beating, vessels must be careful to go about on the bearings mentioned above, to avoid these dangerous sunken rocks.

Sloop Ledges.

After passing Sloop Ledges the next danger is on the eastern shore of Orr's Island. It is a sunken rock, called Eastman's Rock, has three feet at mean low water, and is not buoyed. It is nearly three-quarters of a mile above the southeastern point of Orr's Island, only two hundred yards from shore, and is not, therefore, dangerous to any but those beating in or out.

Eastman's Rock.

One mile and a quarter above the southeastern point of Orr's Island is a ledge, with seven feet at mean low water, called Middle Ledge, or *Middle Rock*, and almost exactly in the middle of the passage. It is nearly five-eighths of a mile above Eastman's Rock and is not buoyed, but is easily avoided by keeping either shore of The Gurnet aboard.

Middle Ledge.

Three-quarters of a mile above the southern point of Great Island and on the eastern shore of The Gurnet begins *a series of shoals*, which, at a distance of about two hundred or two hundred and twenty-five yards from the eastern shore, extend to the head of the cove. Their extent in a westerly direction is marked by a number of bare rocky islets which lie along the western edge of the shoals, and by giving these a berth to the eastward as you approach them the ledges surrounding them are easily avoided.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING THE GURNET.

I. ***Coming from the Eastward.***—Bring Half-Way Rock Light-house to bear **W.** $\frac{1}{2}$ **S.** and Ragged Island **N.** by **W.** $\frac{3}{4}$ **W.**, with twenty fathoms, soft bottom, and steer **NW.** $\frac{1}{2}$ **N.** for about the middle of Bailey's Island, carrying not less than six fathoms water, and passing to the westward of Bold Dick, Saddle-back and Round Rock. When just past Round Rock, and the northern end of Ragged Island bears **E.** by **N.** $\frac{1}{2}$ **N.**, with The Sisters open to the northward of it, and you have ten fathoms water, haul up **N NE.** and steer up the middle of the passage, carrying not less than five fathoms, passing between Middle Ground Rock and Pond Island; between Cedar Ledges and Ram Island; and two hundred and twenty-five yards to the westward of Sloop Ledges. Continue this course until you are past Oak Island and abreast of the southern end of Great Island, in five or six fathoms, hard bottom. Now alter the course to the eastward or westward so as to closely hug either shore, according as the wind favors,—by this means avoiding the dangerous Middle Rock. When past Middle Rock keep the middle of the passage and anchor at pleasure, in from three to four fathoms, soft bottom.

DANGERS

IN APPROACHING AND ENTERING THE GURNET.

II. ***Coming from the Westward, Outside of Half-Way Rock.***—When Half-Way Rock bears **N.** by **W.** ¼ **W.**, half a mile off, the course for The Gurnet is **NE.** by **N. Nearly.** On this course the first danger met with is called Drunker's Ledges. These bear **NE.** by **N.** from Half-Way Rock Light-house, distant two miles, and **S.** ½ **E.** from Mark Island Monument, one mile and a quarter. There are two distinct ledges, but the eastern is the only one obstructing this channel,—the westernmost being buoyed. It has four feet at low water, and is not buoyed; but the sailing-lines will lead to the eastward of it, and it is, therefore, only dangerous to vessels beating in or out. ***Drunker's Ledges.***

Mark Island Ledge lies three-quarters of a mile to the northeastward of Drunker's Ledges, and like them is only dangerous to vessels beating up or down the bay. It bears from Mark Island Monument **SE.** by **S.** ⅜ **S.**, three-quarters of a mile distant, and **NE.** by **N.** ½ **N.** from Half-Way Rock, two miles and three-quarters distant. It has three feet upon it at mean low water and is at times awash, but there are from four to nineteen fathoms water all around it. A black spar-buoy (No. 5) is placed on the western side of this ledge as a guide to Harpswell. Vessels passing into The Gurnet must give it a wide berth to the westward. ***Mark Island Ledge.***

Charity Ledge, although in the middle of the western passage, is not dangerous except in heavy weather and for heavy-draught vessels. It has fifteen feet at mean low water, and is half a mile **E.** by **N.** from Little Jaquish Island and a mile and a quarter **SW.** ¼ **W.** from Pond Island. It is not buoyed and is quite bold-to. (See page 421.) ***Charity Ledge.***

Pond Island Ledges, already described, (see pages 421, 423,) are the next obstructions met with in this channel, and are to be left well to the eastward. They are a series of bare rocks making off from the southern end of Pond Island half a mile in a **SSW.** direction, have shoal water extending one hundred and fifty yards to the southward of the bare rocks, and are not buoyed. ***Pond Island Ledges.***

Just after passing Pond Island and before reaching Horse Cove the passage between Bailey's and Ram islands will be found to be obstructed by three separate sunken ledges, rendering the use of this channel dangerous to strangers. The largest of these lies exactly in the middle of the passage, and is called The Middle Ground. It extends nearly **N.** and **S.**, and covers a space a quarter of a mile long by three hundred yards wide. Six feet at mean low water, or four feet at low spring tides, are found upon this shoal, and it is not buoyed. The southern end of The Middle Ground lies **NW.** by **N.** from the highest part of Pond Island, and is distant three-eighths of a mile. It is a little over a quarter of a mile off the eastern shore of Bailey's Island, and vessels, to avoid it, need only keep that shore aboard,—never going farther to the eastward than to bring the highest part of the southeastern end of Orr's Island to bear **NE.** by **N.** ***The Middle Ground.***

Two hundred and twenty-five yards to the eastward of The Middle Ground is another sunken ledge with ten feet at mean low water; and nearly two hundred yards **NE.** ¼ **E.** from this ledge is another with only seven feet at low water. The latter lies **SW.** by **W.** from Ram Island, distant three hundred yards, and both ledges are called Ram Island Ledges. There is good water on all sides of them, and a channel with seven fathoms between them and The Middle Ground; but it is unsafe for a stranger to attempt either passage. It is, indeed, very unsafe for any stranger to attempt to pass between Ram and Pond islands, not only on account of the *long lines of bare ledges* surrounded by shoal water which make off to the northeastward from Pond Island to a distance of six hundred yards, but also because the Ram Island Ledges almost close the passage, leaving only a narrow channel between them. As these ledges are not buoyed the risk of striking upon one or the other is too great for a stranger to accept. ***Ram Island Ledges.***

From the southern end of Ram Island *a line of bare ledges* extends towards Pond Island two hundred yards, and shoal water extends to the southwestward over two hundred yards farther, or to a quarter of a mile from the southern end of Ram Island. Thus the passage between the two islands is contracted at its beginning to a width of two hundred and seventy-five yards, with sunken rocks on each side. It should, therefore, never be attempted by those unacquainted with its dangers.

After passing The Middle Ground, the next obstruction met with is also on the eastern side of the channel, and is called Littlejohn's Rock. It lies a quarter of a mile **S.** from the southeastern point of Orr's Island and six hundred yards **W NW.** from Ram Island. Six feet at mean low water and four feet at low spring tides may be found upon this rock. There is a good channel on either side of it, but the usual and safest one is between it and Orr's Island; and the channel now leads to the eastward, between the island and the rock. After passing the rock, keep a quarter of a mile off Orr's Island shore, to avoid *a ledge with twelve feet at mean low water,* which lies two hundred and fifty yards from shore five-eighths of a mile above the southeastern point of the island. This ledge is bold-to and has good water on all sides of it; but strangers should not, however, attempt to go between it and the island. ***Littlejohn's Rock.***

Vessels beating in or out must beware of Sloop Ledges when standing over to the eastward. These ledges lie along the northwestern side of Cedar Ledges and close to them, have three feet at low water, and are not buoyed. To avoid them, go about as soon as the highest part of the land on the eastern side of The Gurnet bears NE. by N. ½ N.

Sloop Ledges.

Eastman's Rock. Next above the twelve feet rock mentioned above is Eastman's Rock, on the western side of the channel, and not buoyed. This rock is a knubble, formed on the southern end of the ledge making off in a southerly direction from the shore of Orr's Island, nearly three-quarters of a mile above the southeastern point. It is two hundred yards from shore, has three feet at mean low water, and is therefore nearly awash at low spring tides.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING THE GURNET.

II. ***Coming from the Westward, Outside of Half-Way Rock.***—Pass three-quarters of a mile to the southward of Half-Way Rock, and when the light-house bears NW. by N., steer NE. by N. ¼ N. for the southeastern end of Orr's Island, carrying not less than five and a half fathoms. *If bound into Horse Cove,* when past Pond Island and The Middle Ground, and the middle of Ram Island bears E., the cove will be open, and you may steer NW. by W. ½ W., about for the southern side of the entrance to Wills' Straits, and carrying not less than five fathoms. When you are passing the northeastern point of Bailey's Island give it a berth of four hundred yards, and anchor in the bight to the westward of it in from three to five fathoms at low water.

If bound into Lowell's Cove, continue the course NE. by N. ¼ N., which will lead you straight up to the entrance to the cove, passing to the westward of The Middle Ground and Littlejohn's Rock. When within about four hundred yards of the southeastern point of Orr's Island, alter the course to NE. by N. ½ N., which will lead you safely into the cove. There is nothing less than four and a half fathoms on these courses, and from four to six fathoms, soft bottom, at the anchorage.

If bound up into The Gurnet, continue the course NE. by N. ¼ N. until you are within four hundred yards of the southeastern end of Orr's Island. Ram Island will then bear SE. by E. ¾ E., and Littlejohn's Rock will be in range with it, two hundred yards off, and there will be about five and a half fathoms, hard bottom. Then steer ENE. for Oak Island, keeping it in range with the small bare islet to the southward of Long Point, and carrying not less than twenty-one feet. On this course, when Ram Island bears S. by W. ⅛ W. and the highest part of Two-Bush Ledge E SE., seen just clear of the northeastern end of Cedar Ledges, with seven fathoms, soft bottom, steer NE. by N. up the cove, keeping the western shore aboard, as soon as you are past Eastman's Rock, to avoid Middle Rock. After passing Middle Rock keep nearly in the middle of the channel, and anchor at pleasure. There is not less than five fathoms until you are past Middle Rock, and after passing it not less than twenty feet.

These courses pass about twelve hundred yards to the eastward of Drunker's Ledges; three hundred and fifty yards to the westward of Charity Ledge; one hundred and twenty-five yards to the westward of The Middle Ground; one hundred and fifty yards to the northward of Littlejohn's Rock; one hundred and seventy-five yards to the eastward of the twelve feet rock; and one hundred and eighty yards to the westward of Eastman's Rock.

DANGERS

IN APPROACHING AND ENTERING THE GURNET.

III. ***Coming from the Westward, between Half-Way Rock and Drunker's Ledges.***—In this channel, which is a very commonly used passage through Casco Bay, the first danger met with is on the southern side of the passage. It is Webster Rock, lies three hundred and fifty yards N. from Half-Way Rock, and has eight feet at low spring tides. It is not safe to go between the rock and Half-Way Rock,—the ground being shoal and broken. Webster Rock is marked by a black spar-buoy (No. 7) placed in five fathoms water on the northern end of the shoal. The buoy is thirty-five feet long and can be seen from a considerable distance. (See page 420.)

Webster Rock.

The steamer "Daniel Webster" struck upon this rock in the summer of 1856 and received considerable damage.

Drunker's Ledges guard the northern side of the entrance to this channel, but are not in the way unless a vessel is beating through and standing to the northward. The southeastern ledge, which obstructs this channel, bears **NE. ½ N.** from Webster Rock buoy, one mile and three-quarters distant, and **S. ½ E.** from Mark Island Monument, a mile and a quarter distant, and has four feet at mean low water and two at low spring tides. It is not buoyed, but the western ledge has a buoy painted red and black in horizontal stripes placed in five fathoms water off its western end, which serves as a mark for both ledges. (See page 420.) ***Drunker's Ledges.***

Charity Ledge (already described on pages 421, 425) is the next obstruction met with, and is common to all the channels leading in from the westward. It lies exactly in the middle of the passage, but on the starboard side of the western channel, and has fifteen feet at mean low water, and is not buoyed. Charity Ledge is half a mile **E.** by **N.** from Little Jaquish Island and a mile and a quarter **SW. ¼ W.** from Pond Island. ***Charity Ledge.***

All the western channels here join, and the dangers will be found described on pages 425, 426.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING THE GURNET.

III. ***Coming from the Westward, between Half-Way Rock and Drunker's Ledges.***—Pass half a mile to the northward of Half-Way Rock, and when the light-house bears **S SE.**, and you have about ten fathoms water, hard bottom, steer **E NE.** until Mark Island Monument bears **N. by W. ½ W.** and Half-Way Rock Light-house **SW. ⅝ W.** On this course there is not less than twelve fathoms water. Then steer **NE. by N. ¼ N.** for the southeastern end of Orr's Island, and continue this course, carrying not less than five and a half fathoms, until you are within four hundred yards of the island; when follow the directions given on page 426 for entering The Gurnet.

These courses pass a quarter of a mile to the northward of Webster Rock buoy and twelve hundred yards to the eastward of Drunker's Ledges.

DANGERS

IN APPROACHING AND ENTERING THE GURNET.

IV. ***Coming from the Westward, between Mark Island Ledge and Drunker's Ledges.***—This channel leads to the eastward, between Mark Island Ledge on the north and the westernmost of the Drunker's Ledges on the south, and joins the other channels about a third of a mile to the southward of Jaquish Island.

Mark Island Ledge lies on the northern side of the entrance to this passage, and bears from Mark Island Monument **SE. by S. ⅝ S.**, three-quarters of a mile distant, and **NE. by N. ½ N.** from Half-Way Rock Light-house, two and three-quarter miles distant. Three feet at mean low water are found upon it, and it is at times awash; and there are from four to nineteen fathoms all around it. A black spar-buoy (No. 5) is placed on the western side of this ledge as a guide to Mericoneag Sound and Harpswell. Vessels passing into The Gurnet must give it a wide berth to the northward. (See page 420.) ***Mark Island Ledge.***

Drunker's Ledges lie on the southern side of the entrance to this passage. The western ledge is three-quarters of a mile **SW.** by **S.** from Mark Island Ledge, and **N NE.** from Half-Way Rock Light-house, distant two miles. It is bare at half-tide, and is marked by a spar-buoy painted red and black in horizontal stripes placed in five fathoms water on the southwestern side of the ledge. ***Drunker's Ledges.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING THE GURNET.

IV. ***Coming from the Westward, between Mark Island Ledge and Drunker's Ledges.***—When Half-Way Rock Light-house bears **S.**, Mark Island Monument **NE. ½ N.**, and Portland Head Light-house **W. by S. ¼ S.**, with twenty-five fathoms, hard bottom, steer **E. by N. ½ N.** for the northern end of Ragged Island, carrying not less than six fathoms water. Continue this course until the western end of Jaquish Island bears **NW. by N. ¼ N.**, half a mile off, and Mark Island Monument bears **W. by N. ⅝ N.**, and you have about ten fathoms water. Then steer **NE. by N. ¼ N.** for the southeastern point of Orr's Island, and follow the directions given on page 426 for proceeding up into The Gurnet.

These courses pass a quarter of a mile to the northward of Drunker's Ledge buoy and four hundred yards to the southward of Mark Island Ledge.

DANGERS

IN APPROACHING AND ENTERING THE GURNET.

V. ***Coming from the Westward by the channel between Mark Island Ledge and Jaquish Island.***—The use of this channel presupposes having come through the bay by the inside passage among the islands, and it is, therefore, not used by vessels seeking a harbor of refuge,—there being very much better and safer harbors to the westward of it. But a vessel bound for The Gurnet by this passage will meet at the entrance with a bare rocky islet on the northern side of the channel, called Whale Rock, and sometimes **The Whale's Back.** It is a bare rocky islet lying nearly **E.** and **W.** and tolerably bold-to, and bears **SW.** by **W.**, eight hundred yards from Mark Island Monument, and nearly three miles **N** by **E.** from Half-Way Rock Light-house.

Whale Rock.

Mark Island Ledge is on the southern side of the passage, three-quarters of a mile farther to the eastward. It bears **SE.** by **S.** $\frac{3}{8}$ **S.** from Mark Island Monument, three-quarters of a mile off, and **NE.** by **N.** $\frac{1}{2}$ **N.** from Half-Way Rock, distant two miles and three-quarters, and has three feet at mean low water. A black spar-buoy (No. 5) marks this ledge, and is placed on its western side in four fathoms water.

Mark Island Ledge.

After passing Mark Island Ledge a long ledge will be met with making off from the southwestern end of Jaquish Island to a distance of nearly three hundred yards. This is *Jaquish Ledge*, and is nearly all bare at low water and is not buoyed. Its southern end is, however, quite bold-to. The channel leads past Jaquish Island and Little Jaquish, and joins the main channel close under the shore of the latter.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING THE GURNET.

V. ***Coming from the Westward by the channel between Mark Island Ledge and Jaquish Island.***—When Eagle Island bears **N.**, Mark Island Monument **NE.** by **E.** $\frac{1}{2}$ **E.**, and Half-Way Rock Light-house **S.**, with from twelve to fifteen fathoms, dark-green mud, steer **E.** $\frac{1}{2}$ **N.**, nearly for the southern end of Ragged Island, passing nearly a quarter of a mile to the southward of Jaquish Island and the same distance to the northward of Mark Island Ledge, and carrying not less than seven fathoms water. On this course continue until Pond Island bears **NE.** $\frac{1}{2}$ **E.**, with about six fathoms, rocky bottom, when steer **NE.** by **N.** $\frac{1}{4}$ **N.** for the southeastern end of Orr's Island, and follow the directions given on page 426.

RIDLEY'S COVE.

This name is applied to that broad and deep passage contained between Great Island on the north and east and Yarmouth Island on the west, and leading into Quohog Bay. Good anchorage will be found here in from four to seven fathoms, with smooth water except in southerly and southwesterly winds. A number of islands lie off the Great Island shore, which somewhat diminish the width of the passage, but at the same time form a secure harbor in all winds between them and the northern shore. The width of the entrance is further contracted by a small rocky island lying off the southeastern end of Yarmouth Island and called Flash Island. It is a bare rock, destitute of vegetation, lies two hundred yards **SE.** of Yarmouth Island and is surrounded by shoal water. There is no safe passage between it and Yarmouth Island.

Flash Island.

West Cundix Point is the eastern point of the entrance to Ridley's Cove. It is forty feet high and wooded, and forms the southwestern point of Great Island.

Yarmouth Island, which forms the western shore of Ridley's Cove, is a thinly wooded, bold and rocky island, its summit rising to one hundred and forty feet above high-water mark. On all sides but the eastern it is surrounded by extensive shoals, bare rocks and ledges, but the eastern shore is tolerably bold-to. The island is nearly three-quarters of a mile square.

Yarmouth Island.

Within a hundred yards of the northeastern head of Yarmouth Island, and connected with it at low water, is a small bare islet, called **Bush Island**, marking the southeastern point of entrance to the passage leading into Quohog Bay. Abreast of it on the eastern side of Ridley's Cove, is a small island, called **George's Island**, which is twenty-five feet high and thinly wooded with no passage between it and Great Island. The deep cove which here indents the western shore of Great Island, nearly separating it into two parts, is known as Hen Cove, and three islands, called **Hen Islands**, occupy a considerable portion of it. The smallest two lie close in to the shore, at the head of the cove, and are connected with it at low water. The largest, known as **Great Hen Island**, lies a little over two hundred yards to the southwestward and the same distance **SE.** of George's Island, and is only about fifty yards from the Great Island shore. There is no passage between it and George's Island. On its northwestern end it is bluff and forty feet high, with a wooded summit.

Hen Cove.

The northern shores of Ridley's Cove are formed by the southern shore of Great Island. The land is about sixty feet high, with wooded slopes, but the summit is partially cleared. The best and safest anchorage in the cove is on the northern side of George's Island between it and the wooded shore, in from two to four fathoms water, soft bottom.

DANGERS

IN APPROACHING AND ENTERING RIDLEY'S COVE.

I. ***Coming from the Eastward.***—Coming into Ridley's Cove from the eastward, the course leads to the northward past Bald Head, and the first danger to be avoided is *Bald Head Ledge*, lying three-eighths of a mile **S.** by **W.** ¼ **W.** from Bald Head, and **W.** ¼ **N.**, three-quarters of a mile from Cape Small Point. It is bare at half-tide and always breaks, even in the calmest weather. (See page 412.) After passing it there are no obstructions until you are up with Wyman's Ledge, on the western side of the channel. It is a very dangerous ledge, with four feet at mean low water, lying half a mile **E.** by **S.** ½ **S.** from the southern end of Woody Mark Island and one mile and a half **NW.** ¼ **W.** from Bald Head, and is not buoyed. (See page 413.) ***Wyman's Ledge.***

Chivers' Ledge, a dangerous rock, is also on the western side of the channel into Ridley's Cove, has six feet at mean low water, and is half a mile **N NW.** from Wyman's Ledge, three-eighths of a mile **NE.** ½ **E.** from Mark Island, and is not buoyed.

After passing Chivers' Ledge there are no dangers in this channel until you are past Flag Island and abreast of Long Ledge. Here another bad ledge is met with, still on the western side of the channel, and called David's Castle. It is bare at half-tide, lies one mile **W.** ¾ **S.** from the highest part of the southernmost Long Ledge and one mile and an eighth **SW.** from Jenny's Island, and always shows itself by breakers. It is not buoyed. ***David's Castle.***

Passing David's Castle the course leads to the westward of a large ledge, known as Jenny's Ledge, half a mile **S SW.** from Jenny's Island. It covers an area about six hundred yards square, is awash at low water on its shoalest part, and has a good channel between it and Long Ledge, but the usual channel into Ridley's leads to the westward of it. It is not buoyed. When abreast of this ledge the channel turns to the northeastward and leads directly for the edge of the bluff on Great Hen Island. A vessel in beating up will encounter several obstructions on the western side of the channel, but the eastern side is clear until you are past Jenny's Island. ***Jenny's Ledge.***

Of the dangers on the western side, the first met with, after passing David's Castle, is called Elm Island Ledge. The **Elm Islands** are two rocky islets lying **E.** and **W.** from each other, a quarter of a mile to the northeastward of Two-Bush Ledge. The easternmost is the larger,—being three hundred yards long and forty feet high, and bare. The other is smaller, twenty feet high, and has a few trees upon it. A small, round, bare rock lies about a hundred yards off the southern end of the larger islet. From these islands shoal ground extends due **S.** for a quarter of a mile, with spots of five and six feet upon it here and there. This is Elm Island Ledge, and is only dangerous to vessels beating in or out. The general rule to avoid this shoal is not to approach the eastern island nearer than two hundred and fifty yards, and if standing across its southern end to give it a berth of at least five hundred yards. ***Elm Island Ledge.***

Strangers should not attempt to stand to the westward of the highest part of the easternmost Elm Island bearing **N.** ¾ **W.**, as in seeking to avoid the southern point of Elm Island Ledge they run a risk of getting on a bad ledge on the southern side, called Dick's Shoal. This ledge, bare at low water, lies half a mile **S.** from the easternmost of the Elm Islands, and the shoalest part of it is six hundred yards **W.** from David's Castle. From the summit of the rock, however, the shoal water extends to the eastward to within fifty yards of David's Castle. This ledge is not buoyed. ***Dick's Shoal.***

When abreast of Jenny Island there will be seen to the northwestward two rocky islets with bare ledges to the southward of them, and a group of three or four bare islets much larger than these to the northward. These rocks, covered with boulders and pebbles of various sizes, have received the name of Ballast-Stone Ledges. They are surrounded by shoal ground and intersected by narrow and tortuous channels,—the whole shoal surface being three-quarters of a mile long by six hundred yards wide. A channel with six fathoms at low water leads along their eastern side into the bight or cove on the southern side of Yarmouth Island. ***Ballast-Stone Ledges.***

A rock with nine feet at mean low water, and not named, lies **W.** from West Cundiz Point three hundred and fifty yards, and **NE.** by **N.** from Jenny's Island, six hundred yards distant.

Flash Island should receive a berth to the westward of one hundred yards.

From Great Hen Island and George's Island the shoal water extends to the westward and southwestward a quarter of a mile; and on the extreme southwestern end of the ledge is a knubble with only two feet at mean low water and bare at low spring tides. This rock lies nearly three hundred yards **SW.** by **S.** from George's Island, a quarter of a mile **W.** from Great Hen, and is called George's Island Rock. ***George's Island Rock.***

Vessels intending to anchor between the southern shore of Great Island and George's and the Hen islands must hug the northern side of George's Island, keeping about ninety or a hundred yards from it when rounding its northern end, to avoid the shoals which fill up the head of the cove and extend to within two hundred yards of George's Island. A bare rocky islet marks the southern end of these shoals. Give it a berth of fifty yards and you may go safely into the anchorage.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING RIDLEY'S COVE.

I. ***Coming from the Eastward.***—When Half-Way Rock Light-house bears **W.** $\frac{1}{8}$ **N.**, Bald Head **N.** by **E.** $\frac{1}{2}$ **E.**, and Bald Head Ledge is on with **Southern Head**, (just to the southeastward of Bald Head,) steer **N.** by **W.** $\frac{1}{4}$ **W.**, carrying not less than five fathoms water, and continue this course until you are abreast of the southern end of Long Ledge, in twelve fathoms, soft bottom, and Jenny's Island bears **N.** $\frac{1}{4}$ **E.** Now steer for the island, round it to the westward at a distance of two hundred and fifty yards, with from eight to nine fathoms water, bring the bluff on Great Hen Island to bear **NE.** by **N.** $\frac{1}{4}$ **N.** and steer for it, anchoring at pleasure. in from three to four fathoms, soft bottom. Or you may continue this course until you are abreast of Flash Island, when haul up to the northward and steer **N.** by **E.**, keeping the Yarmouth Island shore aboard to avoid George's Island Rock. On this course there is not less than five and a half fathoms water until you are past George's Island. If the wind be easterly, westerly or northerly, anchor under the southwestern shore of Great Hen Island. But if it be southerly, keep the **N.** by **E.** course until you are up with the northern end of George's Island, when round the island (keeping about one hundred yards from it) and steer to the eastward, anchoring in from fifteen to twenty feet, sheltered from all winds.

DANGERS

IN APPROACHING AND ENTERING RIDLEY'S COVE.

II. ***Coming from the Southward and Westward.***—This channel leads to the northeastward, between The Brown Cow and The White Bull and between the latter and Woody Mark Island.

Lumbo's Ledge. Vessels coming from seaward will first fall in with Lumbo's Ledge, four miles and three-quarters **E.** $\frac{1}{2}$ **N.** from Half-Way Rock Light-house and two miles and a half **S.** $\frac{3}{4}$ **W.** from Ragged Island. One small spot upon this ledge has eleven feet at low water, and is marked by a spar-buoy painted with black and red horizontal stripes, which is one hundred yards to the southward of the shoal. (See page 415.)

Mark Island Ledge. After passing Lumbo's Ledge there are no obstructions until you are past The Brown Cow and nearly up with Mark Island. Here there will be seen, bearing about **N.**, a bare ledge off Mark Island, called Mark Island Ledge, or sometimes *Woody Mark Island Ledge*, to distinguish it from the other ledge of the same name to the westward. It is five hundred and fifty yards **W SW.** from Mark Island and seven-eighths of a mile **E.** by **S.** $\frac{3}{4}$ **S.** from the White Bull, and is not buoyed, but always shows itself by breakers.

The Sisters Ground. After passing Ragged Island, the next danger is on the western side of the channel, and is called The Sisters Ground,—a mass of shoals and detached ledges, having from five to twelve feet upon them at mean low water, and lying about **SE.** from The Sisters. Their southeastern end is three-quarters of a mile **ENE.** from the southern end of Ragged Island; the same distance **NE.** by **N.** $\frac{1}{4}$ **N.** from The White Bull; and one mile **NW.** $\frac{1}{2}$ **N.** from Mark Island. Strangers beating in or out must not stand to the westward of The White Bull bearing **SW.** $\frac{1}{2}$ **S.** At night keep Half-Way Rock Light-house open to the southward of Ragged Island. These ledges are not buoyed; but a buoy has, however, been recommended to mark them.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING RIDLEY'S COVE.

II. ***Coming from the Southward and Westward.***—When Half-Way Rock Light-house bears **W.** $\frac{1}{4}$ **S.**, distant three miles and three-quarters, and the centre of Ragged Island **NE.** by **N.** $\frac{3}{4}$ **N.**, with twenty-six fathoms, soft bottom, steer **NE.** $\frac{1}{4}$ **N.**, passing between Mark Island and The White Bull, (but closer to the latter,) and carrying not less than thirteen fathoms. Continue the course until the highest part of Mark Island bears **SE.** by **S.** $\frac{1}{2}$ **S.** and the southern point of Ragged Island **W.** $\frac{3}{4}$ **S.**, with fourteen fathoms, hard bottom; when steer **N.** $\frac{1}{8}$ **E.** until you are abreast of David's Castle and up with Jenny's Ledge, and have ten fathoms, soft bottom. Two-Bush Ledge will now bear **W.** $\frac{3}{4}$ **N.**, and the highest part of West Cundiz Point will just touch the southern point of Jenny's Island on a bearing of **NE.** $\frac{1}{4}$ **N.** Now steer **NE.** by **N.** $\frac{1}{4}$ **N.** for the bluff on Great Hen Island, (on which course the eastern and western channels join off West Cundiz Point,) and follow the directions given above.

For the other passages leading into Ridley's Cove the chart will be the best guide.

MERICONEAG AND HARPSWELL SOUNDS.

Next to the westward of The Gurnet is the entrance to Mericoneag and Harpswell sounds. The entrance to the former is between Jaquish Island on the east and Little Mark Island on the west, and is about a mile wide. The sounds are formed by an arm of the sea extending in a northeasterly direction for seven miles to the mouth of Stover's River. On the east this arm of the sea is bounded by Bailey's, Orr's and Great islands; and on the west by Haskell's Island and a long peninsula of the mainland, called Harpswell Neck. The southernmost part of this body of water, which is embraced between Bailey's Island on the east and Haskell's Island (off the southeastern point of Harpswell Neck) on the west, is called Mericoneag Sound. The northern part, from Stover's Point to the mouth of Stover's River, is called Harpswell Sound.

Little Mark Island.

Little Mark Island is a bare islet, rocky and bold-to, lying six hundred yards **S.** from the southwestern point of Haskell's Island and the same distance **NE.** by **E.** from Whale Rock. Upon its summit and near the centre is built a square stone obelisk, fifty feet high, as a guide to vessels passing through the bay or bound into Harpswell. It is a conspicuous mark when standing in from sea anywhere between Cape Small Point and Cape Elizabeth, and is known as **Mark Island Monument.** It is painted black and white in perpendicular stripes, except near the top, which is black on each side; and its geographical position is

Latitude ..... 43° 42′ 32″ N.
Longitude ..... 70° 1′ 53″ W.

It bears from Half-Way Rock Light-house **N.** by **E.** ½ **E.**, three miles and an eighth, and from Cape Small Point **W.** by **N.** ⅝ **N.**, eight miles and a quarter distant.

Turnip Island.

Turnip Island is a small bare rock **NW.** from Jaquish Island, and two hundred and seventy-five yards off. It is on the eastern side of the entrance, and is very bold-to on its eastern side, but the other sides are bounded by shoals. There is no passage between it and Bailey's Island, but there is a good channel between it and Jaquish, which leads to a narrow strait (fit only for light-draught vessels) between Bailey's and Jaquish islands. This strait is called **Jaquish Cut,** is full of ledges and bare rocks, and has seven feet at mean low water.

Jaquish Island.

Jaquish Island has already been described, on page 420, as a small, low, rocky island **SE.** from Turnip Island and a little over two hundred yards **S.** from Bailey's Island, from which it is separated by Jaquish Cut. A grove of spruce and fir occupies about one-third of its surface.

Haskell's Island.

On the western side of the entrance to Mericoneag Sound lies Haskell's Island. It is **N.** of Little Mark Island six hundred yards distant, extends in a **NE.** and **SW.** direction seven-eighths of a mile, is eighty feet high, mostly bare, and under cultivation. The northeastern end is the lower, and has scattered groups of trees and a number of houses upon it; and its eastern shore is tolerably bold-to. On its northern side it is indented by two small coves,—the easternmost of which is called **Great Harbor Cove,** and is used as an anchorage by fishermen; while the other is smaller, shallower, and has no name.

Three hundred yards off the eastern shore of Haskell's Island and six hundred yards **NE.** ¾ **N.** from Little Mark Island is a bare rocky islet, known as **Great Mark Island.** It is forty feet high and bold-to on its eastern side, but its southern side is shoal; and between it and Haskell's Island there is a passage with ten feet at low water.

Bailey's Island.

The eastern shores of Mericoneag Sound are formed by Bailey's Island, which lies **NE.** by **N.** and **SW.** by **S.,** is two miles long, irregular in shape and quite narrow. Its southwestern end shows a bare bluff appearance, and the summit of this bluff is covered with a thick growth of spruce and is sixty feet high. Near the middle of the island the land descends to a height of forty feet and again rises to sixty. It again descends, as it approaches the northeastern end, to forty feet, and again rises to sixty feet, thus giving the surface an undulating appearance. The upper end of the island is mostly cleared land dotted with houses and under fine cultivation.

Mackerel Cove.

On the western side Bailey's Island is indented by a long and narrow but deep cove, called Mackerel Cove, which is an excellent harbor and is very much used. It makes in a **NE.** direction between the southwestern end of the island and a low gently sloping point, about forty feet high, making out from the western shore of Bailey's Island about **SW.** The cove is half a mile long and has a uniform width of about two hundred yards. It is perfectly free from obstructions, and affords excellent holding-ground, although somewhat exposed to **SW.** winds. On its northern side, Bailey's Island is separated from Orr's Island by **Wills' Straits,** a rocky channel three hundred and fifty yards wide. This passage (through which six feet at low water can be carried) is very much used by small light-draught vessels, but it is so narrow, crooked and full of ledges that no stranger dare attempt it. At half-tide or high water a **N.** by **W.** or **S.** by **E.** course *made good* will carry a vessel safely through, but at low water no one course will do it. (See page 422.)

The northeastern shore of Bailey's Island is indented by two coves, of which the easternmost only is important. It is called **Horse Cove,** (see page 423,) and is a very convenient anchorage.

Potts' Point.

The southeastern end of Harpswell Neck presents a regularly sloping hill about one hundred feet high, cleared and thickly settled. The land is under cultivation, as indeed is most of the peninsula On its southern side it sends off a long, low, rocky point, nearly three-quarters of a mile long and very narrow, called Potts' Point; and between this and the northern end of Haskell's Island is the eastern entrance to a most commodious land-locked harbor, called **Potts' Harbor.** This excellent anchorage is contained between the southern shores of Harpswell Neck on the north, east and west, and Upper Flag Island and Haskell's Island on the south and southwest, and is further protected from westerly winds by Horse Island and Little Birch Island.

The northeastern point of Harpswell Neck is tolerably low, and called **Stover's Point,** on the western side of which the land falls away to the southward and westward and forms a semicircular cove, called Harpswell Harbor or Stover's Cove. Here Mericoneag Sound ends and Harpswell Sound begins.

Harpswell Neck. Harpswell Neck is an irregularly shaped peninsula, about eight miles long, making off from the mainland in a **SW.** direction, between Harpswell Sound on the east and Middle Bay on the west. Its shores are much indented by coves; its surface is undulating, varying from forty to one hundred and forty feet in height; it is almost entirely cleared and under cultivation; and is thickly dotted with houses, forming the town of **Harpswell.**

Harpswell Harbor. Harpswell Harbor, or **Stover's Cove,** as it is mostly called, is the first indentation of importance on the eastern shore of the neck. It is a semicircular cove with from two to four fathoms water, contained between Stover's Point and the main shore, and is three miles and an eighth above the entrance to Mericoneag Sound. It is about half a mile wide and the same distance long, and is unobstructed.

Clark's Cove is the next indentation on the eastern shore of the neck, one mile and three-quarters above Stover's Point, and is of little importance, as at low water it is nearly all bare. It is separated by a low and narrow point from **Merriman's Cove,** another small, shallow and unimportant cove, with three feet at low water, and only used by those who live upon its shores.

Just to the northward of Merriman's Cove the shore is deeply indented by two long and narrow but shallow coves. The westernmost, running **N NE.,** is called **Widgeon Cove,** and is three-quarters of a mile long and nearly all bare at low water. It is likewise of little importance.

Mill Cove. The eastern cove, which runs into it, has a **NE.** and **SW.** course, and is called Mill Cove. It is a mile long and from an eighth to a quarter of a mile wide, and is nearly all bare at low water; but seven feet may be taken through a very narrow and crooked channel for about a third of a mile up the cove. Its eastern shores are formed by a long, narrow and irregularly shaped peninsula, terminating in a broad round head eighty feet high, called **High Head,** which is two miles and three-quarters above Stover's Point. This peninsula separates Mill Cove from the upper part of Harpswell Sound.

Stover's River empties into Harpswell Sound a mile above High Head and is three miles long. The northern part of the river is called **Harpswell Cove.**

The eastern shores of Harpswell Sound are formed, as stated before, by Orr's Island and part of Great Island.

Orr's Island (see page 422) is large, of considerable height, lies **NE.** and **SW.,** and is about three miles long. It is thickly settled, and the surface is diversified with wooded slopes and cleared and cultivated lands studded with houses. The woodlands are mostly near the southern end, but wood is being rapidly cut and the appearance of the land

Orr's Island. constantly changing. The island is one hundred feet high, and on the western side is indented by two coves. First is **Beal's Cove,** which is situated about a mile above the entrance to Wills' Straits, runs about **SW.,** and is nearly all bare at low water. The other, which makes in about five-eighths of a mile above it, is called **Reed's Cove,** is wide but shallow, and the approach to it is obstructed by ledges. There are two more small shallow coves to the northward of Reed's Cove,—the northernmost making in on the extreme northwestern end of the island. They are not named, and are of no importance.

On its northern face Orr's Island is indented by a very long and narrow cove called Long Cove, nearly a mile and a quarter long and only about two hundred yards wide. Six feet at low water can be taken up to about five-eighths

Long Cove. of a mile from its mouth, and it is perfectly sheltered. Its shores are from eighty to one hundred and twenty feet in height.

On its eastern shore Orr's Island has one small cove one mile above its southern end, called **Cow Cove.** It is of no importance. On the southern side is the large and commodious cove called Lowell's Cove, nearly half a mile

Lowell's Cove. long and a third of a mile wide at its mouth, which affords capital anchorage in from three to five fathoms, soft muddy bottom. The northeastern point of Orr's Island is connected with Great Island by a bridge crossing the head of The Gurnet.

The western shore of Great Island, which forms the eastern boundary of the upper part of Harpswell Sound, is steep and high,—the summit being over one hundred and forty feet above high-water mark,—and the land is wooded. Approaching Stover's River the shore is lower and much cut up by small coves; and a creek, bare at low water and called **Strawberry Creek,** empties into the Sound a little over a quarter of a mile below the mouth of the river.

From the mouth of Stover's River to Doughty's Point, the northwestern point of Great Island, is a mile and three-quarters, and the shore-line is much cut up by small unimportant coves. The land is nowhere higher than sixty

Doughty's Point. feet, and has a very gradual slope towards the water; and a few houses will be seen on the summits. Doughty's Point is narrow, quite low and wooded, and forms the northwestern end of Great Island, the southern shore of Prince's Gurnet and the western point of the entrance to Long Reach.

Long Reach. On the northern side of Great Island there is a long cove running to the southwestward, two miles and a quarter long, with an average width of five hundred yards. This is Long Reach, and it nearly cuts Great Island into two parts. A strip of land seventy-five yards wide alone separates the head of the reach from another narrow and irregularly shaped cove which makes in on the eastern side of the island abreast of Pole Island and one mile and a half above Long Point. Long Reach affords comfortable anchorage, in thirteen feet at low water, seven-eighths of a mile from its mouth.

Prince's Point. Prince's Point is long, low, and forms the southern extremity of a peninsula making out from the mainland and bounding Harpswell Cove on the east. It laps Doughty's Point,—its southern end bearing

about **W.** from that point; and between the two is a narrow and crooked passage called **Prince's Gurnet**, with seventeen feet at low water, leading into Long Reach. From the junction of Long Reach and Prince's Gurnet a narrow channel leads to the northeastward into **Buttermilk Cove** and **Simon's Gurnet**, (see page 412.) The latter is bridged by a permanent bridge connecting Great Island with Buttermilk Point on the main. This passage is, therefore, not available for vessels, and small boats only can use it.

A mile and a half above Prince's Point is the head of Stover's River. Here the narrow water-way which formerly existed has been filled up by meadow-grass.

Several small and unimportant islands lie within the limits of Mericoneag and Harpswell sounds. Coming into Mericoneag, and when abreast of the northern end of Haskell's Island, you will see, bearing about **N.**, a small, bare, rocky island a little to the eastward of Potts' Point and close in with the shore. This is Ram Island, which is nearly a quarter of a mile from shore, and bears **E.** ¼ **N.** from the extremity of Potts' Point. There is no passage between it and Potts' Point,—the deep water running up into a pocket behind the island. **Ram Island.**

Ram Island is surrounded by shoals; and beyond it there are no islands in the passage until you are past Bailey's Island and approach the northern end of Orr's Island, when there will be seen bearing about **NE.**, and close to shore, a small rocky islet called Wyer's Island. This is a bare islet connected with Orr's Island by a chain of bare rocks, and is a little over two hundred yards from the shore and surrounded by flats. Westward of it the shoal water extends a quarter of a mile with less than six feet. **Wyer's Island.**

Passing Wyer's Island, there will be seen well over towards the Great Island shore a small bare rock, lying about a hundred and fifty yards off the northern end of Orr's Island and three hundred yards from the shore of Great Island, called Dog's Head. It is surrounded by shoal water and obstructs the entrance into Long Cove,—the channel leading into that cove passing between Dog's Head and the Great Island shore. The passage is narrow,—the shores on both sides being flat; but fifteen feet at low water may be carried through. **Dog's Head.**

Six hundred yards above Dog's Head is Uncle Zeke's Island, a bare rock, lying nearly in the middle of the Sound, and surrounded by ledges and flats which extend over two hundred yards from the rock to the eastward; but on the channel side the islet is tolerably bold. There is a crooked passage, with fourteen feet at low water, between Uncle Zeke's and Great Island, but it must not be attempted by strangers. **Uncle Zeke's Island.**

A small bare islet, not named, lies about a hundred yards from shore off the mouth of Strawberry Creek, and is connected with Great Island at low water.

Another small nameless islet lies two hundred yards **S.** from Prince's Point and the same distance **W.** from Doughty's Point,—the passage into Prince's Gurnet leading between them with seventeen feet at low water. Above this there are no islands in the passage.

DANGERS

IN APPROACHING AND ENTERING MERICONEAG AND HARPSWELL SOUNDS.

I. ***Coming from the Eastward.***—A vessel bound into Harpswell from the eastward will meet with no obstructions until she is within a mile of Mark Island Monument, where the channel passes between Jaquish Island and Mark Island Ledge. This dangerous sunken ledge lies **SE.** by **S.** ⅜ **S.** from the Monument, three-quarters of a mile distant, and **SW.** by **W.** from Jaquish Island, nearly a mile distant. It has three feet at mean low water, and is at times awash; but there are from four to nineteen fathoms water all around it. A black spar-buoy (No. 5) is placed on the western side of this ledge, to which a good berth must be given by vessels coming from the eastward. (See page 428.) ***Mark Island Ledge.***

Jaquish Ledge, which is on the northern side of the channel, is a long point making off from the southwestern end of Jaquish Island to a distance of two hundred and seventy-five yards. It is nearly all bare at low water, is quite bold-to, and is not buoyed. The channel between it and Mark Island Ledge is five-eighths of a mile wide. ***Jaquish Ledge.***

Passing Jaquish Ledge, there will be seen to the northward a red spar-buoy (No. 2), which is on the southern end of Turnip Island Ledge, lying a quarter of a mile **W.** by **S.** ½ **S.** from Turnip Island, bare at low water, and bearing from the Monument **E.**, a little over three-quarters of a mile distant. Vessels should not attempt to pass between this ledge and Turnip Island, as there is *a ledge with ten feet at mean low water* two hundred and fifty yards **NE.** from the buoy. Ledges also extend from Turnip Island to the southward two hundred and fifty yards. ***Turnip Island Ledge.***

From the southeastern end of Ram Island a bare ledge, called **Ram Island Ledge**, extends in a **SW.** direction, and is surrounded by shoal water to a distance of six hundred yards from the island. Off the southern end of this shoal ground, in four fathoms, is placed a red spar-buoy (No. 4). There are four fathoms water between it and Haskell's Island, in the passage leading into Potts' Harbor.

The western shore of Bailey's Island is bold-to, and may be approached very closely with four fathoms water; but the shore of Harpswell Neck, from Potts' Point to the southern side of Stover's Point, is lined with flats, and must not be approached by vessels drawing twelve feet or more nearer than a quarter of a mile.

A little over half a mile **E NE.** from Ram Island is a ledge with sixteen feet at low water, called Interval Shoal. It is not buoyed, and is only dangerous to vessels of heavy draught. It lies exactly in the middle of the passage,—being six hundred yards from either shore,—and at low spring tides it has fourteen feet.

Interval Shoal.

The eastern side of Stover's Point is bold-to, and may be closely approached with four fathoms water; but off its northern end, and obstructing the entrance to Harpswell Harbor, is a long shoal, called Stover's Point Shoal, which extends in an **E. ½ N.** direction three hundred yards, and is bare at low water for nearly the whole distance. A black spar-buoy (No. 1) is placed in good water off the eastern point of the shoal as a guide to Harpswell Harbor. Just to the westward of this buoy, apparently in the middle of the entrance to the harbor, will be seen another black spar-buoy (No. 3). This buoy is in four fathoms, about twenty yards to the northward of *Stover's Ledge*, which has about one foot at mean low water and lies close in with the northern side of the point. Vessels entering the harbor must leave this buoy to the southward.

Stover's Point Shoal.

Off the northwestern point of Bailey's Island, and obstructing the entrance to Wills' Straits, extends *a long shoal with dry ledges*, **NE.** by **N.**, four hundred yards. Vessels standing across this point must give it a berth to the southward of a quarter of a mile to avoid the ledge. It is not named nor buoyed. Three hundred yards **NE.** by **N.** from the dry part of these ledges there is *a sunken rock*, obstructing the approach to Wills' Straits and dangerous for vessels beating in or out. It lies about three hundred yards off the western shore of Orr's Island and nearly opposite to the black buoy on Stover's Point Shoal. It has eleven feet at lowest spring tides; but there is deep water all around it.

After passing Stover's Point Ledge the next danger met with is a ledge dry at low water, lying nearly in mid-channel, and called Merriman's Ledge. It is one mile above Stover's Point and three hundred and seventy-five yards from shore, and extends in a **NE.** by **N.** and **SW.** by **S.** direction for nearly six hundred yards. For one-fourth of this distance it is dry at low water and it is not buoyed. There is a shoal spot with thirteen feet at low spring tides to the southwestward of it and about two hundred yards from shore. Vessels beating in or out must beware of it if they draw twelve feet water.

Merriman's Ledge.

Passing Merriman's Ledge, the next danger is Dipper Cove Ledges. These extensive shoals make off from the southern point of the entrance to Reed's Cove, have from eight to seventeen feet upon them at mean low water, and the shoal of the ledges is between seven and eight hundred yards **N.** by **E. ½ E.** from the southern point of the entrance to Reed's Cove. Vessels must not stand to the eastward of the summit of High Head bearing **NE. ¼ N.** This bearing clears not only Dipper Cove Ledges, but also the flats off Wyer's Island.

Dipper Cove Ledges.

Nearly opposite to Dipper Cove Ledges, and a quarter of a mile **S.** by **W. ¾ W.** from the eastern point of Clark's Cove, is a ledge with six feet at low spring tides, called Clark's Ledge. It lies three-eighths of a mile **NE.** from Merriman's Ledge and is not buoyed. To avoid it, vessels must not stand to the westward of Stover's Point bearing **SW.**; but when once past the long point separating Clark's and Merriman's coves they may stand close in to the mouth of the latter with safety.

Clark's Ledge.

Opposite to Merriman's Cove, and off the shore of Orr's Island, *extensive flats and ledges make out to a distance of six hundred yards* with less than five feet at mean low water; and from Wyer's Island a long shoal extends towards High Head four hundred yards. These together form a very extensive piece of shoal ground, and so obstruct the channel as to render the passage unsafe for strangers. The channel at High Head is only about fifty yards wide.

The northern shore of Orr's Island is also quite shoal, and vessels must keep the Harpswell shore aboard. The shoals also extend out from Great Island to Zeke's Island; but vessels may go close to the latter, leaving it to the eastward. After passing Strawberry Creek there are no shoals in the channel of Stover's River,—the rule being to keep the middle of the passage.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MERICONEAG AND HARPSWELL SOUNDS.

I. *Coming from the Eastward.*—When Bald Head bears **N.** by **E. ½ E.** and Half-Way Rock Light-house **W. ⅛ N.**, with fourteen fathoms, hard bottom, steer **NW.** by **W. ¾ W.** for Mark Island Monument, carrying not less than five fathoms, and passing nearly midway between Jaquish Island and Mark Island Ledge. On this course continue until you are abreast of Turnip Island Ledge buoy and three-quarters of a mile from the Monument, with sixteen fathoms water, when steer **N. ¼ W.** for the northeastern end of Haskell's Island, carrying not less than sixteen fathoms water. When the northern end of Great Mark Island bears **W NW.** and Turnip Island **E SE.**, with sixteen fathoms, muddy bot-

A whistling-buoy, (painted red, with H. R. in black letters,) giving blasts at short intervals, has been moored in nineteen fathoms off **Half-Way Rock** in Casco Bay. The position of this buoy, as given by the Light-House Board, is as follows:

Half-Way Rock Light-house bears	**NW. $\frac{1}{4}$ N.**
Mark Island Monument bears	**N. $\frac{5}{8}$ E.**
Junk of Pork bears	**W. by N. $\frac{1}{8}$ N.**

tom, steer **NE. ¾ N.**, having High Head a little open to the northeastward and carrying not less than ten fathoms water. On this course, *wishing to anchor in Harpswell Harbor*, when abreast of the black buoy on Stover's Point Shoal and you are in thirteen fathoms, steer **N.** by **W. ½ W.**, carrying not less than eleven fathoms water, until the buoy bears **SW. ½ W.** and is about two hundred yards off; when steer **W NW.**, and anchor at discretion in from two to four fathoms, soft bottom. *Sailing Directions--Mericoneag and Harpswell Sounds.*

But, if bound up the Sound, continue the course **NE. ¾ N.**, carrying not less than five fathoms water, until you are exactly between the long point separating Clark's and Merriman's coves and the southwestern point of Reed's Cove, having them bearing **N.** and **S.**, respectively, with seven fathoms, soft bottom. High Head will then bear **NE.**, and you must steer for it, carrying not less than five fathoms, until within two hundred and fifty yards. Then steer **E NE.**, passing High Head at a distance of one hundred yards in four fathoms water, and continue until Dog's Head bears **E.** by **S. ¾ S.**, a quarter of a mile off, and there is five fathoms, soft bottom. Now steer **NE.** by **N. ½ N.** past Uncle Zeke's Island, with not less than twenty feet water, and continue the course until the small islet off the mouth of Strawberry Creek bears **E.** by **N. ½ N.**, when steer **N. ¾ E.** into Stover's River, carrying three and a half fathoms water. After entering the river the chart will be the best guide,—the general rule being to keep the middle of the passage. Seventeen feet at mean low water can be taken up to Prince's Point through a narrow and crooked channel.

The above courses pass nearly half a mile to the westward of Jaquish Ledge; six hundred and fifty yards to the eastward of Mark Island Ledge; two hundred and fifty yards to the westward of Turnip Island Ledge; one hundred and twenty-five yards to the eastward of Interval Shoal; two hundred and seventy-five yards to the eastward of Stover's Point Shoal; two hundred and seventy yards to the eastward of Merriman's Ledge; one hundred and seventy-five yards to the westward of Dipper Cove Ledges; the same distance to the eastward of Clark's Ledge; one hundred yards to the westward of the flats off Orr's Island and Wyer's Island; and one hundred yards to the eastward of High Head.

DANGERS

IN APPROACHING AND ENTERING MERICONEAG AND HARPSWELL SOUNDS.

II. ***Coming from Seaward or from the Southward.***—Coming from the southward, the first prominent object met with is also an obstruction to the approaches to Harpswell, and is called Half-Way Rock,—a bare rocky islet, elevated about sixteen feet above high-water mark, and about one hundred and fifty yards square, with no vegetation of any kind upon it, and surrounded by shoal water. Off its western end extend the dangerous *Southwest Ledges*, bare at low water to a distance of three hundred and seventy-five yards; but on the southern and eastern sides it is much bolder. On the northern side the ground is broken and a number of ledges crop up, rendering it unsafe for vessels to go close to the islet on that side. The most northerly of these ledges is *Webster Rock*, three hundred and fifty yards **N.** of Half-Way Rock, which has eight feet at lowest tides, and is marked by a black spar-buoy (No. 7) placed off its northern end. (See page 426.) *Half-Way Rock.*

On Half-Way Rock is erected a granite light-tower sixty-six feet in height, known as Half-Way Rock Light-house, which shows a fixed white light, varied by red flashes once every minute, from a height of eighty feet above sea-level. The light is of the third order of Fresnel, and visible in ordinary weather fifteen nautical miles. It bears from *Half-Way Rock Light-house.*

	Miles.
Seguin Light-house, W.	12 ½
Cape Small Point, W. ⅝ S.	9 ½
Mark Island Monument, S. by W. ½ W.	3 ⅛
Portland Head Light-house, E. ⅛ N.	7 ¾
Cape Elizabeth Light-houses, E NE.	9

Passing Half-Way Rock, the next obstruction met with is Drunker's Ledges. This extensive piece of shoal ground bears **N NE.** from Half-Way Rock, distant two miles. There are two distinct ledges, lying **NW. ½ W.** and **SE. ½ E.** from each other, with a deep channel a quarter of a mile wide between them; but it is with the northwestern ledge that we have to do, as the other does not obstruct this passage. It is bare at half-tide; and off its southwestern end a spar-buoy, painted red and black in horizontal stripes, is placed in six fathoms at low water, and is to be left to the eastward going into Mericoneag. Vessels do, however, in day-time, and at low water when both ledges show, pass to the eastward of this buoy and go *Drunker's Ledges.*

between the ledges. Vessels coming from the eastward also sometimes pass between this buoy and Mark Island Ledge buoy; but the safest course coming from seaward is to leave Drunker's Ledge buoy to the eastward. (See also page 427.)

After passing Drunker's Ledges the course leads to the northeastward and approaches Mark Island Ledge, also on the eastern side of the channel. (See page 433.) It lies **NE.** by **N.** from Drunker's Ledges, three-quarters of a mile distant, and **SE.** by **S.** $\frac{3}{8}$ **S.** from Mark Island Monument the same distance. It is marked by a black spar-buoy (No. 5) placed on the western side of the ledge, which must be left to the eastward by vessels using this channel.

Mark Island Ledge.

Abreast of Mark Island Ledge buoy, and on the western side of the channel, is **Whale Rock**, a bare rock, lying nearly **E.** and **W.**, and about two hundred yards long. It is eight hundred yards **SW.** by **W.** from Mark Island Monument and nearly three miles **N.** by **E.** from Half-Way Rock Light-house, and is tolerably bold-to.

Turnip Island Ledge is a ledge bare at low water, three-quarters of a mile **NE.** $\frac{3}{4}$ **N.** from Mark Island Ledge, and **E.** from the Monument three-quarters of a mile. It is marked by a red spar-buoy (No. 2) placed on its southern side, which is to be left to the eastward. (See page 433.)

Turnip Island Ledge.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MERICONEAG AND HARPSWELL SOUNDS.

II. ***Coming from the Southward or from Sea.***—Bring Portland Head Light-house to bear **W.** and Mark Island Monument **NE.** by **N.** $\frac{1}{8}$ **N.**, with between twenty and thirty fathoms, sticky bottom, and steer **NE.** $\frac{3}{4}$ **N.**, which course will lead you clear of everything, with not less than five fathoms, through Mericoneag Sound and into Harpswell Sound, until you are between Clark's and Reed's coves, in eight fathoms, having the long point separating the former from Merriman's Cove bearing **N.** and the southern point of Reed's Cove **S.** Then steer **NE.** for High Head, and follow the directions given on page 435.

On these courses, wishing to anchor in Mackerel Cove.—On the **NE.** $\frac{3}{4}$ **N.** course, when Mark Island Monument bears **W.** by **S.** $\frac{3}{4}$ **S.**, steer **NE.** by **E.** $\frac{3}{4}$ **E.**, which will lead you clear of danger, and with not less than ten fathoms, into the cove. When fairly in, keep the middle of the passage up to the head of the cove, and anchor or moor as you desire, in from three to ten fathoms, soft bottom.

If you intend to anchor in Harpswell Harbor, when abreast of the black buoy off Stover's Point, and in thirteen fathoms, steer **N.** by **W.** $\frac{1}{2}$ **W.**, carrying not less than eleven fathoms, until the buoy bears **SW.** $\frac{1}{2}$ **W.**, about two hundred yards off; when steer **W NW.**, and anchor at discretion, in from two to four fathoms, soft bottom.

The above courses for entering Mericoneag Sound pass nearly six hundred yards to the westward of Drunker's Ledges; three-eighths of a mile to the westward of Mark Island Ledge; nearly eight hundred yards to the eastward of Whale Rock; and about six hundred yards to the westward of Turnip Island Ledge.

The course into Mackerel Cove passes four hundred yards to the northward of Turnip Island Ledge.

DANGERS

IN APPROACHING AND ENTERING MERICONEAG AND HARPSWELL SOUNDS.

III. ***Coming from the Westward.***—There are two commonly used channels for vessels coming from Portland bound into Mericoneag. The southernmost and safest is from Portland Head, outside of the Green Islands. The other is used by vessels which have come out of Portland by the White Head Passage, and leads between Outer and Inner Green islands.

Vessels using the outer channel, on leaving Portland Head, steer to the eastward, leaving to the northward a low grassy islet, called **Ram Island**, which lies **N.** and **S.**, and is about a quarter of a mile long. It is half a mile to the southward of White Head and a mile and an eighth **NE.** by **E.** $\frac{1}{4}$ **E.** from Portland Head Light-house. There is a deep channel between it and White Head, but from its southern end makes off a long ledge with many bare rocks scattered over its surface. This is Ram Island Ledge; and its southern end bears **E.** by **N.** $\frac{1}{4}$ **N.** from Portland Head Light-house, distant nearly a mile, and **W.** from Half-Way Rock Light-house, distant six miles and three-quarters. It is not buoyed, as it always shows itself; but a day-beacon, in the shape of a wooden tripod fifty feet high, has been erected on its southern end about high-water mark. It is covered in one-third of the way down, and painted red.

Ram Island Ledge.

Passing Ram Island Ledge there will be seen a nun-buoy, painted red, bearing about **S SE.**, and marked with the letters "W. R." in white. This is on Witch Rock, one of the obstructions to Portland Entrance, which has four fathoms at low water and about twenty-two feet at low spring tides. The buoy bears **E.** by **S.** from Portland Head, distant nearly a mile and a half, and **S SE.** from the centre of Ram Island seven-eighths of a mile, and is placed in eight fathoms water to the southeastward of the ledge. ***Witch Rock.***

After passing Witch Rock there are no dangers until you are up with Outer Green Island, a small grassy island, bare of trees, which bears **E. ¼ N.**, two miles and three-quarters from Ram Island; **E.** by **N.**, four miles from Portland Head Light-house; **W. ¾ N.**, three miles and three-quarters from Half-Way Rock; and **SW. ½ W.**, one mile and three-quarters from Jewell's Island. Two hundred and fifty yards **SE.** from it is a bare rock, surrounded by ledges, called **Junk of Pork.** This rock is quite bold-to on its southeastern side, but there is no passage between it and Outer Green Island except for small boats. It is best, in passing along its eastern or western sides, to give it a berth of two hundred yards on its eastern and two hundred and fifty yards on its western side. ***Outer Green Island.***

After passing Junk of Pork the channel turns to the northeastward, and there is nothing in the way until you enter the Sound.

The inner or northern channel, leading through Casco Bay to Mericoneag Sound, is used by vessels having come through the White Head Passage. The course leads to the eastward, between Outer and Inner Green islands, and the first obstruction met with is The Hussey, a pinnacle rock, with twelve feet at low water, bearing **NE. by E. ¾ E.** from Portland Head Light-house, (in range with the southern end of Ram Island,) and **E. ¼ N.**, two miles and an eighth from White Head. It is marked by a second-class iron can-buoy, painted red and black in horizontal stripes. The rock is bold-to, and the buoy may be approached quite closely with seven fathoms water. ***The Hussey.***

Inner Green Island is a mass of rock surrounded by shoals and ledges. It lies **NE. ½ E.** from Outer Green Island a little over a mile and an eighth, and **E. ½ N.** from White Head, distant three miles and three-quarters. The shoals extend a quarter of a mile to the northward of the island, two hundred and fifty yards to the eastward, a quarter of a mile to the southward, and two hundred yards to the westward; and it is not safe to approach the island within these distances. ***Inner Green Island.***

The large partly wooded island half a mile **NE.** from Inner Green Island is **Jewell's Island**; and there is an excellent channel between the two with five fathoms water.

The next danger met with is between the two Green islands, and is a very dangerous ledge, called Green Island Reef. It is an extensive shoal, lying **W NW.** and **E SE.**, covering an area of a quarter of a mile long by two hundred and fifty yards wide, and bare in places at low spring tides. From Inner Green Island it bears **SW. ½ S.**, half a mile distant, and from Outer Green Island **NE.** by **E.**, three-quarters of a mile distant. It is marked by a red spar-buoy (No. 2) placed on its southwestern point in five fathoms, which is to be left to the northward by vessels bound to the eastward through this channel. There is a good passage to the northward of this reef, between it and Inner Green Island. ***Green Island Reef.***

About midway between the buoy on Green Island Reef and the northeastern end of Outer Green Island lies Johnson's Rock, a small detached pinnacle rock, with seven feet upon it at mean low water and bold-to on all sides,—the water deepening rapidly to six and eight fathoms all around it. Vessels using this passage may avoid the rock by passing to the southward of the buoy on Green Island Reef close-to. Johnson's Rock bears from ***Johnson's Rock.***

	Miles.
The northeastern end of Outer Green Island, NE. ¾ E.	¼
Green Island Reef buoy, W. by S. ⅜ S.	¼
Inner Green Island, SW. ¼ W.—a little over	⅞
White Head, E. ½ S.	3⅛

After passing Green Island Reef buoy the channel joins the main channel, and there are no obstructions until you enter the Sound. (See pages 433–434.)

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MERICONEAG AND HARPSWELL SOUNDS.

III. ***Coming from the Westward.***—1. ***By the outside channel:*** From Portland Head steer **E. Northerly** for Half-Way Rock Light-house, and on this course continue until Outer Green Island bears **N. by E. ¾ E.**, a little over half a mile off, and Mark Island Monument **NE. by E. ⅛ E.**, (in range with Whale Rock,) and there is fifteen fathoms, hard bottom. Now steer **NE. by E. ¼ E.**, passing three hundred and fifty yards to the southward of Whale Rock and four hundred yards to

Sailing Directions--Mericoneag and Harpswell Sounds.

the southeastward of Mark Island Monument. This course will lead, with not less than eight fathoms water, directly into Mackerel Cove. But, *if bound into Harpswell Cove, or up into Stover's River*, when Mark Island Monument bears **W.** ¼ **S.** and the southern end of Jaquish **E.** by **S.** ¼ **S.**, with seventeen fathoms, muddy bottom, steer **NE.** ¾ **N.**, which will lead up to Stover's Point in not less than ten fathoms water.

Wishing to anchor in Harpswell Harbor: When Stover's Point Shoal buoy bears **NW.** ¾ **W.**, or is abeam, and there is thirteen fathoms, steer **N.** by **W.** ½ **W.**, carrying not less than eleven fathoms, until the buoy bears **SW.** ½ **W.**, about two hundred yards off. Then steer **W N W.**, and anchor at discretion, in from two to four fathoms, soft bottom. But, *if bound up to Stover's River*, continue the course **NE.** ¾ **N.**, with not less than five fathoms, until you are exactly between the southern point of the entrance to Reed's Cove and the long point separating Clark's from Merriman's Cove, with eight fathoms water, and have the former bearing **S.** and the latter **N.** High Head will now bear **NE.**, and you must steer for it, following the directions given on page 435.

These courses pass three hundred and seventy yards to the southward of Ram Island Ledge; six hundred yards to the northward of Witch Rock; a quarter of a mile to the southward of Junk of Pork; and three hundred and fifty yards to the southward of Whale Rock.

2. ***By the inside channel from White Head.***—It is not safe for sailing vessels to use the White Head Passage unless there is a strong breeze, as they are apt to be becalmed under the high bluff of White Head and run a risk of being set on White Head Ledge or Trott's Rock. With a good breeze the passage is safe, and it is an excellent cut-off for steamers. Vessels coming out of White Head Passage and bound to the eastward, or through Mericoneag Sound, must, as soon as they are clear of White Head, steer **E.** for the red spar-buoy on Green Island Reef. On this course there is not less than eight fathoms, and when Half-Way Rock Light-house bears **E.** by **S.** ¼ **S.** and Inner Green Island **N.** ¾ **W.**, (in range with the southwestern end of Crotch Island,) steer **NE.** by **E.** ¼ **E.**, which course will lead you clear of all dangers, and with eight fathoms water, into Mackerel Cove. Or, *if bound into Harpswell Harbor*, when Mark Island Monument bears **W.** ½ **S.** steer **NE.** ¾ **N.**, carrying ten fathoms water, until you are abreast of Stover's Point Shoal buoy, in thirteen fathoms. Then steer **N.** by **W.** ½ **W.**, with eleven fathoms, until the buoy bears **SW.** ½ **W.**, when steer **W NW.**, and anchor at pleasure in from two to four fathoms, soft bottom.

But, if bound up into Stover's River, continue the course **NE.** ¾ **N.**, with not less than five fathoms water, until High Head bears **NE.**, the long point separating Clark's and Merriman's coves **N.**, and the southern point of the entrance to Reed's Cove **S.** Now, being exactly between Clark's Ledge and Dipper Cove Ledges, steer **NE.** for High Head, and follow the directions given on page 435.

These courses pass nearly eight hundred yards to the southward of The Hussey; close-to, to the southward of Green Island Reef; and three hundred and fifty yards to the southward of Whale Rock.

The passage between Inner Green Island and Jewell's Island should not be attempted by a stranger except under the pressure of necessity, and the chart will be the best guide for it. By keeping a little nearer to Jewell's Island than to Green Island and steering **NW.** ½ **W.**, five fathoms may be carried through.

POTTS' HARBOR.

This excellent harbor of refuge lies on the southwestern side of Harpswell Neck. It is bounded on the north by the shores of the neck; on the east and southeast by Potts' Point, making off from the neck; on the south by Haskell's Island; on the southwest by Upper Flag Island; and on the west and northwest by Horse Island and the southwestern point of the neck, known as Basin Point. Thus it is almost completely land-locked, forming a capacious harbor, with from three to six fathoms, soft bottom, at low water. The anchorage ground is half a mile long in a **N.** and **S.** direction, and three-quarters of a mile wide in an **E.** and **W.** direction. The main entrance into the harbor is from the westward, between Horse Island and Upper Flag Island. There is a good but narrow channel, with sixteen feet, leading into the harbor from the eastward between Potts' Point and Haskell's Island, which is well buoyed, and safe with a fair wind.

Ash Point Cove.

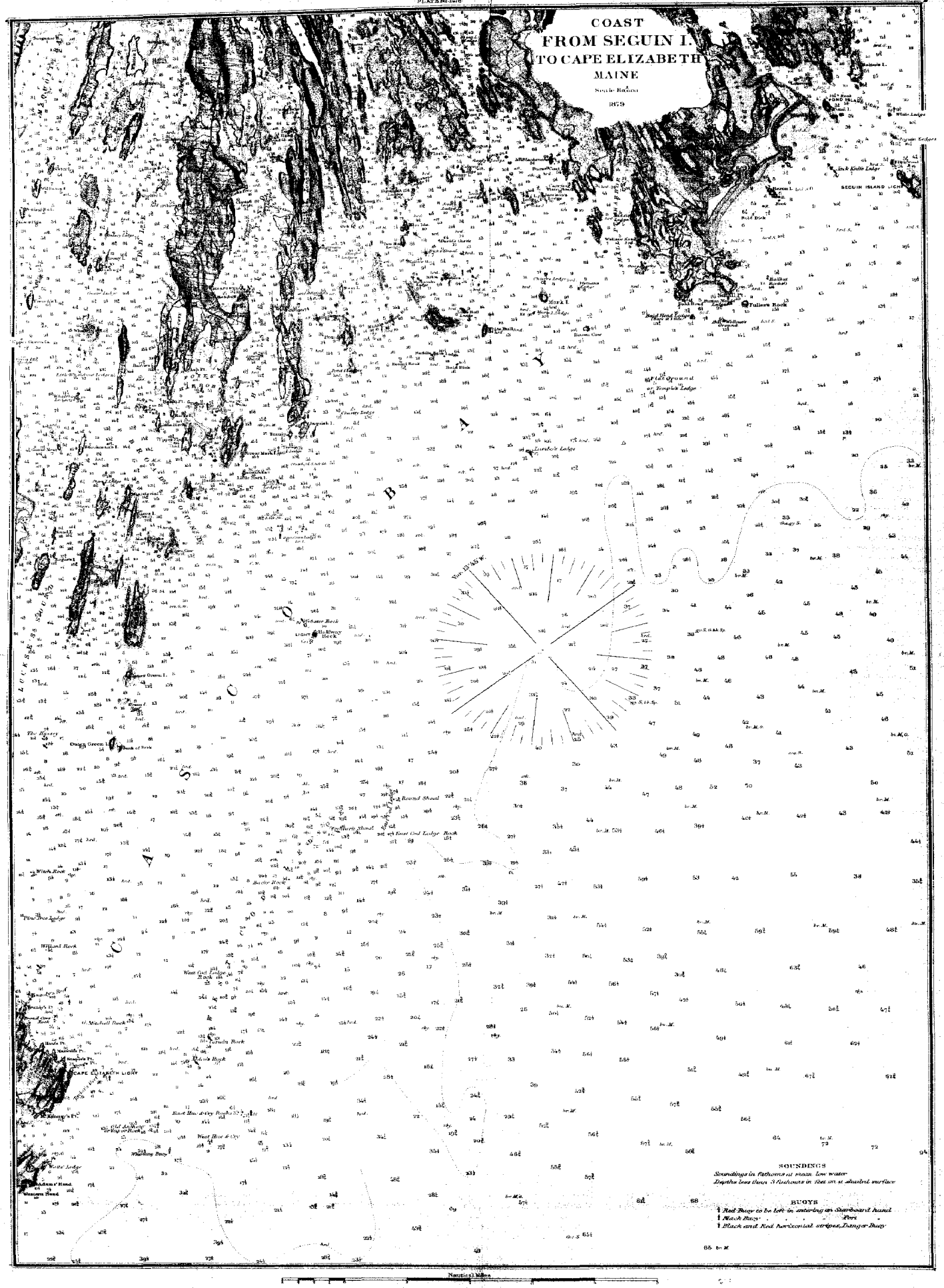
The southern shore of Harpswell Neck is very much cut up by coves. Of these, the easternmost and largest is contained between the upper part of Potts' Point, where it joins the main, and a bare point on the west, forty feet high, called **Ash Point.** This cove forms the northern part of Potts' Harbor and is called Ash Point Cove, is half a mile wide and nearly three-quarters of a mile long, and has from four to seventeen feet in it. It is divided longitudinally by a bar, dry at low water, which extends off from the head of the cove, southwesterly, to its mouth. A small, low, bare islet, called **Bar Island,** lies near the southern end of this bar; and that portion of the cove to the eastward of it is shallow and of no importance. Anchorage in ten feet at mean low water may, however, be had in the western cove a quarter of a mile above its mouth. Its shores are mostly cleared and settled.

PLATE No. 1.

COAST FROM SEGUIN I. TO CAPE ELIZABETH MAINE

Surveyed

1859



SOUNDINGS

Soundings in Fathoms at mean Low water
Depths less than 3 Fathoms in Feet on a sheeted surface

BUOYS

† *Red Buoy to be left in entering on Starboard hand*
† *Black Buoy* . . . . . *Port* .
† *Black and Red horizontal stripes, Danger Buoy*

To the westward of Ash Point a narrow and crooked channel, with eleven feet at low water, leads to the northeastward into a long cove called Basin Cove. The entrance is between Ash Point on the east and a long, narrow and cleared point from twenty to forty feet high, called **Basin Point**, which presents a somewhat saddle-like appearance when viewed from the southward,—being quite low in the middle and forty feet high at both ends. Several houses occupy the lower land, which forms the southwestern point of Harpswell Neck. Eight feet at low water may be safely carried up Basin Cove for three-quarters of a mile from its mouth; but above this it is bare at low water. The channel is narrow but unobstructed. **Basin Cove.**

Four hundred yards **SW.** by **S.** from Basin Point lies a small island about twenty feet high, and bare of trees except two lone trees on its summit. It is called Horse Island, and there is no passage between it and Basin Point. Its southern side is quite bold-to, but on the eastern side shoal water extends off two hundred yards. It forms the northern side of the entrance to Potts' Harbor. **Horse Island.**

One-quarter of a mile **W.** from Horse Island is a low grassy islet, called Little Birch Island, lying **NE.** and **SW.**, a quarter of a mile long but quite narrow, and bold-to on its eastern side. South, west and north it should receive a berth on account of the shoal water making off in those directions; but an excellent and unobstructed channel exists between it and Horse Island. **Little Birch Island.**

About eight hundred and seventy-five yards **S.** by **E.** from Little Birch Island is Upper Flag Island, bare, about forty feet high at its southern end, but quite low near the northern end. It lies **NE.** and **SW.** and is half a mile long. From Horse Island its northern end bears **S.** ½ **E.**, six hundred yards distant, with the entrance to Potts' Harbor between them. From the southwestern extremity of Haskell's Island the summit of the island bears **N NW.**, three-quarters of a mile distant. **Upper Flag Island.**

Upper Flag Island is surrounded by very extensive ledges and shoals. To the northeastward they extend nearly three-quarters of a mile,—the northeastern end being marked by a black buoy. To the southeastward they extend half a mile, nearly to Haskell's Island, but leaving a narrow channel close along the shore of the latter. From the northeastern end of Upper Flag Island shoals extend to the northward a quarter of a mile; but near the southern end this shore is bold-to. On the southeastern side the deep water runs close along shore into a pocket near the northern end.

Haddock Rock is a mass of rough bare rock, forming an islet, lying about five hundred yards **W.** from the western end of Haskell's Island. It is tolerably bold on its eastern side, and there is a good and much-used channel between it and Haskell's Island; but on the western side it must receive a berth of two hundred and fifty yards. Between this rock and Eagle Island, to the westward of it, is a wide and deep channel with five fathoms water, but obstructed by shoals. **Haddock Rock.**

Eagle Island lies half a mile **W.** from Haddock Rock; three-quarters of a mile **W.** from Haskell's Island; and the same distance **SW.** by **S.** from Upper Flag Island. From Half-Way Rock Light-house it bears **N.**, three miles and a quarter distant, and is a quarter of a mile long in a **NE.** by **N.** and **SW.** by **S.** direction, and surrounded by ledges and bare rocks. It is densely wooded with a variety of trees except near the northern end, where it is bare; and a long, low, rocky point makes off to the northward, ending in a ledge bare at low water. The island is between sixty and seventy feet high, and must not be approached closely on any side (but especially on the northern and western sides) on account of the ledges and rocks surrounding it. **Eagle Island.**

Stave Island, Ministerial Island and Bates' Island are three islets lying on the western side of Broad Sound, but somewhat obstructing the approach to Potts' Harbor from the westward.

Stave Island is the most northerly and irregularly shaped island, lying **NE.** and **SW.**, about six hundred and fifty yards long, and presents when viewed from the southward a somewhat saddle-shaped outline,—being lowest in the middle, but nowhere higher than twenty feet. Scattered fir trees are seen, and there is a grove on the summit of the bluff on the northern side. Viewed from the northward and northwestward, it shows a low surface with a few scattered fir trees upon it, and the southwestern end is bare and twenty feet high; but in the middle the outline descends into a small valley, again rising as you approach the eastern end to a height of twenty feet. Here the surface is thinly wooded, and from this end a long ledge, bare at half-tide, makes to the northeastward. Off the end of this ledge is **Stave Island Ledge**, nearly awash at low water, and marked by a black spar-buoy. **Stave Island.**

To the southeastward of Stave Island the ground is shoal and broken all the way to Ministerial Island, a quarter of a mile off, and it is not safe to attempt to pass between the two. Stave Island lies seven hundred yards **NE.** from Crotch Island; half a mile **S SE.** from the southwestern end of Little Bangs Island; a mile and a half **W SW.** from Little Birch Island; and the same distance **W.** from Upper Flag Island.

Ministerial Island is a quarter of a mile **SE.** from Stave Island,—its northeastern end bearing **E.** by **S.** ½ **S.** from the northeastern end of that island, and it extends from that point **SW.** for nearly half a mile. It is very narrow, (being nowhere more than one hundred and fifty yards wide,) quite low and bare except near the middle, where it rises to twenty feet above sea-level, and has a few trees on the summit. Long ledges make off from its southwestern end, and shoal water surrounds it; and a bar or reef, bare at low water, connects it with Bates' Island, two hundred yards **SE.** from it. **Ministerial Island.**

Bates' Island is about twenty feet high, lies **NE.** and **SW.**, is half a mile long and one hundred and fifty yards wide, and bare with the exception of a clump of spruce and fir trees almost in the centre of the island. On its eastern side it is bold-to; but to the northeastward of it the shoals extend nearly three hundred yards, and to the southwestward of it three-eighths of a mile; and there is no passage between it and Ministerial Island. **Bates' Island.**

DANGERS

IN APPROACHING AND ENTERING POTTS' HARBOR

I. ***Coming from the Eastward, through Mericoneag Sound.***—Vessels first enter Mericoneag Sound and pass to the southward of Haskell's Island, and the first obstruction met with will be seen on the northern side of the entrance. It is called **Ram Island Ledge**, has many bare rocks upon it, and makes off from the southern end of Ram Island in a **SW.** direction to a distance of six hundred yards. It is marked by a red spar-buoy (No. 4) placed in three fathoms water off the southern end of the ledge. Passing it, you must take care not to approach the northeastern end of Haskell's Island, as the ledges and shoals make out towards Potts' Point to within two hundred and seventy-five yards of it, and are bare at low water two hundred and fifty yards from the Haskell's Island shore. These are the Great Harbor Cove Ledges, so called because off the mouth of Great Harbor Cove. They are very extensive,—nearly filling up the passage between Haskell's Island and Potts' Point, (making the channel very narrow and crooked,) and are not buoyed.

Great Harbor Cove Ledges.

When past Great Harbor Cove Ledges look out for Potts' Point Ledge, making off to the southwestward from Potts' Point two hundred and fifty yards. It is bare at low water, and is marked by a red spar-buoy (No. 2) placed in three fathoms to the southwestward of it. This buoy must be left to the northward and eastward, but must be passed close-to. When past this buoy the channel turns abruptly to the northward, and there will be seen ahead a black spar-buoy. This is on Northwest Ledge, which make off from the northwestern point of Haskell's Island in a due **N.** direction for a quarter of a mile, is bare in several places at low water and awash close to the buoy, which is a spar, marked No. 1, and placed in good water **E.** from the point of the ledge. You must pass to the eastward of it.

Potts' Point Ledge.

Northwest Ledge.

Torry's Rock is a detached rock, bare at half-tide, lying a quarter of a mile **W.** ½ **N.** from Potts' Point and **E.** ¾ **N.** from the eastern end of Flag Island, half a mile distant. There is no passage for strangers between it and Flag Island,—fourteen feet at low water being the best water between the two, and the channel narrow and crooked. Light-draught vessels sometimes go in and out this way, but no stranger should attempt it. Torry's Rock is marked by a black spar-buoy (No. 3) placed in eighteen feet water on the eastern side of the ledge, and must be left to the westward.

Torry's Rock.

After passing Torry's Rock look out for Thrumbcap Ledge. **The Thrumbcap** is a bare rocky islet, which lies **NE.** by **E.** from Upper Flag Island, half a mile from its northeastern end, and is the most easterly of a line of bare rocks, visible here and there above water, between it and the island; and there is no passage on its western side. To the northward and eastward from The Thrumbcap the shoal water extends four hundred yards farther, forming Thrumbcap Ledge, which has five and a half feet at mean low water, and is marked by a black spar-buoy (No. 5) placed on its northeastern end in eighteen feet water. You must pass to the eastward of it; and there are no other obstructions in the harbor.

Thrumbcap Ledge.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING POTTS' HARBOR.

I. ***Coming from the Eastward, through Mericoneag Sound.***—Bring the extremity of Potts' Point to bear **NW.** by **N.** ⅛ **N.** and steer for it, carrying not less than four fathoms, until Ram Island (highest part) bears **NE.** ¾ **E.**, six hundred and fifty yards off, and you are about three hundred yards from Potts' Point. Now steer **W.**, with not less than three fathoms, about for the red spar-buoy on Potts' Point Ledge, which pass close-to, leaving it to the northward; and, rounding it sharply to the northward, steer **N.** ¼ **E.** for the black buoy on Northwest Ledge, which leave close-to to the westward,—passing it in sixteen feet water,—and continue the course, which will lead, with not less than five fathoms, to the anchorage, where there will be from three to five fathoms, soft bottom.

DANGERS

IN APPROACHING AND ENTERING POTTS' HARBOR.

II. ***Coming from the Westward, through the bay.***—Vessels coming from the westward and bound into Potts' Harbor use the passage among the islands leading between Little and Great Chebeag on the north and Long and Hope islands on the south, and thence to Little Bangs Island. When off the western end of Little Bangs Island, and close under its southern shore, the entrance to Potts' Harbor will be visible.

The first danger met with in approaching the harbor by this passage is Sand Island Ledge, which makes off to the northeastward from Sand Island for three hundred and fifty yards, and is bare at mean low water for half its length. Off its northern end, in three fathoms water, is placed a black spar-buoy (No. 1), which must be left to the southward by vessels using this channel, bound either to the eastward or westward. It is the usual custom to pass the buoy close-to. *Sand Island Ledge.*

The next danger met with, which is called Stave Island Ledge, is bare at low-water, and lies a quarter of a mile **NE.** from the long rocky point on the northeastern end of Stave Island,—the bare portion of the rock being two hundred and fifty yards from that point, and the shoal water extending out two hundred yards farther. Off the end of the ledge is placed a black spar-buoy (No. 3) in eighteen feet water, which must receive a berth of one hundred and fifty yards to the southward and westward. *Stave Island Ledge.*

Upper Flag Island Ledge is three hundred yards **NW.** from Upper Flag Island, lies **NE.** and **SW.**, is four hundred yards long, quite narrow and bold-to, and has five feet at mean low water, and is not buoyed. The channel into Potts' Harbor leads between this ledge and Horse Island; but there is also an excellent channel, entirely unobstructed, between it and Flag Island. *Upper Flag Island Ledge.*

Birch Island must receive a berth to the northward of one hundred and fifty yards.

The northeastern part of Flag Island (which is also the lowest part) must not be approached nearer than three hundred yards, to avoid the flats which make off from it; and, as a general rule, vessels should not go to the eastward of Bar Island bearing **NE.** by **E.** $\frac{3}{4}$ **E.**,—thus avoiding all of the shoals between Flag Island and The Thrumbcap.

Thrumbcap Ledge extends out to the northeastward from The Thrumbcap four hundred yards, has five and a half feet at mean low water, and is marked by a black spar-buoy (No. 5) placed in eighteen feet off its northeastern end. Pass to the westward of it, and there are no obstructions after passing it. It is only necessary to recollect that the dry bar extends to the southward of Bar Island nearly three hundred yards, and not to approach it too closely. *Thrumbcap Ledge.*

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING POTTS' HARBOR.

II. ***Coming from the Westward, through the bay.***—Pass to the southward of the southwestern end of Little Bangs Island and close to it, in about six fathoms, and steer **E.** $\frac{1}{2}$ **N.** for Little Birch Island, carrying not less than seven fathoms, until you are abreast of Stave Island Ledge buoy, and in seven fathoms, hard bottom; when steer **E.** $\frac{1}{4}$ **S.**, passing two hundred yards **S.** from Little Birch Island and three hundred and twenty-five yards **N.** from Upper Flag Island Ledge, and carrying nine fathoms water. Continue this course until the highest part of Horse Island bears **NE** $\frac{1}{4}$ **N.**, with Basin Point just open to the westward of it, with about ten fathoms water, when steer **ENE.**, (nearly for Bar Island,) and anchor at pleasure in from three to five fathoms, soft bottom.

This course passes three hundred yards to the northward of Thrumbcap Ledge.

DANGERS

IN APPROACHING AND ENTERING POTTS' HARBOR.

III. ***By the passage between Haskell's Island and Upper Flag Island.***—Vessels sometimes use the narrow and crooked channel which leads along the northwestern shore of Haskell's Island, and between Northwest Ledge and Torry's Rock. This channel must never be used by strangers, however, as it is so full of rocks and sunken ledges (none of which are marked) as to render it utterly unsafe. The passage enters between Whale Rock and Eagle Island Ledge, passes between Haskell's Island and Haddock Rock, and continues close along the Haskell's Island shore to its northwestern end. It then turns to the northward, runs between Northwest Ledge and Torry's Rock buoy, and joins the eastern channel.

The first danger encountered is Eagle Island Ledge, dry at low water, which lies two hundred and fifty yards **SE.** $\frac{1}{2}$ **S.** from the southern end of Eagle Island; but from the dry rock the shoal ground extends **SE.** three hundred yards and **E.** a quarter of a mile, with from eight to ten feet at low water. The eastern extremity of the ledge is nearly a quarter of a mile **SW.** from Haddock Rock, and it is not buoyed. *Eagle Island Ledge.*

Whale Rock is a bare rocky islet, lying nearly **E.** and **W.**, and tolerably bold-to. From Mark Island Monument it bears **SW.** by **W.**, eight hundred yards distant, and from Half-Way Rock Lighthouse **N.** by **E.**, nearly three miles distant.

The channel now leads to the northeastward, towards Haddock Rock, which must be left to the northwestward one hundred and fifty yards off. This rock is about fifty yards square, perfectly bare and surrounded by ledges, and is five hundred yards **W.** from the western end of Haskell's Island; and from its southwestern end shoals extend more than two hundred yards from shore.

Haddock Rock.

Haskell's Island Point, on the eastern side of the passage, immediately opposite to Haddock Rock, has seven feet at mean low water, extends in a westerly direction from the southwestern end of Haskell's Island two hundred and forty yards, and is not buoyed.

Haskell's Island Point.

After passing between Haddock Rock and Haskell's Island Point the channel turns to the northeastward, closely hugging the shore of Haskell's Island; *and two large bare rocks* will be seen to the northwestward, which must receive a wide berth. These rocks lie in the midst of the shoals which extend off from Flag Island towards Haskell's, and the western rock must not be approached nearer than four hundred yards. The easternmost bare rock may receive a berth of two hundred yards to the northwestward. In other words, on the straight course through this channel, Upper Flag Island must be left to the northwestward about half a mile.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING POTTS' HARBOR.

III. ***By the passage between Haskell's Island and Upper Flag Island.***—Bring Half-Way Rock Light-house to bear **S.**, with fifteen fathoms, dark green mud, and Mark Island Monument **NE.** by **E.** ½ **E.**, (in range with Whale Rock,) and steer **NE.** ½ **N.**, carrying not less than four fathoms water. When safely past Haskell's Island Point, Mark Island Monument will bear **SE.** by **S.** and Potts' Point **NE.** ⅛ **N.**, with six fathoms, soft bottom. Steer that course for Potts' Point, keeping pretty close to Haskell's Island, and continue it, carrying not less than fifteen feet, until you are nearly up with the northwestern point of Haskell's Island. Basin Point will bear **N.** by **W.** ¾ **W.** and Ash Point **N.** by **E.**, with Thrumbcap Ledge buoy in range with it, and there will be five fathoms water. Now steer **N.** by **E.** ½ **E.** for Torry's Rock buoy, which will be seen a little to the eastward of Thrumbcap Ledge buoy. On this course there will be not less than three fathoms; but great care must be taken to avoid being set to the eastward, as the slightest deviation from the course in that direction will be apt to set a vessel ashore on Northwest Ledge. But, making this course good, give Torry's Rock buoy a berth of fifty yards to the westward, and steer **N.** by **E.** ⅜ **E.** to the anchorage, when you may anchor in from three to five fathoms, soft bottom.

BROAD SOUND.

Next to the westward of the entrance to Mericoneag Sound is the entrance to Broad Sound; and thence to Middle and Maquoit bays and Freeport River. There is no commerce in either of these, but vessels of large size are sometimes built there; and both the bays afford good anchorage, with from two to six fathoms at low water. Broad Sound is bounded on the north by Stockman's and Whaleboat islands; on the east by Little Birch, Upper Flag and Haskell's islands; and on the west by Stave, Ministerial and Bates' islands, and a group of bare rocks and rocky islets lying to the southward of Bates' Island,—the most prominent of which is called The Brown Cow, or The Brown Cow of Broad Sound. Eagle Island lies in the middle of the Sound.

Stockman's Island is narrow, lies **ENE.** and **WSW.**, and is about six hundred and fifty yards long. It bears **WNW.** from Little Birch Island, one mile and a quarter; **NW.** by **N.** ⅜ **N.** from Eagle Island, one mile and seven-eighths; and **N.** ¼ **W.** from the eastern end of Ministerial Island, one mile distant. This island is low and bare of trees except a very few spruce trees scattered here and there over its surface. Even these diminish year by year, and in a few years none will remain.

Stockman's Island.

Three hundred and seventy-five yards **WSW.** from the western end of Stockman's Island is the western end of a long but narrow island, called Little Bangs Island, extending in a **NE.** and **SW.** direction, three-quarters of a mile long, and from twenty to forty feet high. Its highest part is the bluff at the southwestern end, which is forty feet high and crowned with spruce trees, while the rest of the surface has scattered spruce trees, except the northeastern end, where there is quite a grove. In the middle the land is quite low, but at the northeastern end it rises to a height of twenty feet; and the shores are bold-to on all sides. Between this island and Stockman's Island is an excellent channel with eight fathoms, entirely unobstructed. Both islands are very bold-to, and strangers may use the passage with entire safety.

Little Bangs Island.

Whaleboat Island lies in the middle of the entrance to Middle Bay, extends in a **NE.** and **SW.** direction, is a mile and a half long and from fifty to three hundred yards wide. It lies along the western shore of Harpswell Neck at a distance of half a mile, leaving an excellent and unobstructed channel between them; and from Stockman's Island its southwestern end bears **E.** ½ **N.**, three-quarters of a mile distant. The southern end of Whaleboat Island is forty feet high, with a gentle slope from its summit to the shore, and the top is crowned with a few spruce and fir;

Whaleboat Island.

but the rest of the surface is bare. In the middle the island is very low and grassy, but the northern part is formed by a steep hill covered with trees, and sixty feet above high-water mark, while parts of the surface are cleared and cultivated, and a few houses show along its southeastern face. Its shores are very bold-to, except at the northeastern end; but there are ledges off this end extending to a distance of three hundred yards.

DANGERS

IN APPROACHING, ENTERING AND PASSING THROUGH BROAD SOUND.

In approaching Broad Sound from the bay, the first danger encountered is on the western side of the channel,—a low, bare, grassy islet, surrounded by shoals, ledges and bare rocks, called The Brown Cow, or the **Brown Cow of Broad Sound,** which is twenty feet high and about fifty yards square. It bears from the western end of Bates' Island **S.** $\frac{3}{4}$ **E.,** three-quarters of a mile distant; from Mark Island Monument **W.** by **S.,** nearly two miles; and from Half-Way Rock Light-house **N.** by **W.** $\frac{3}{4}$ **W.,** two miles and three-quarters. To the northwestward of it a group of bare rocks and one or two small islets extend the shoal water to a distance of half a mile. The whole extent of the shoal ground surrounding The Brown Cow is three-quarters of a mile **NE.** and **SW.** by one-quarter of a mile **NW.** and **SE.** These two large masses of bare rock present the appearance of a semicircle ruptured in the middle of the curve; and hence the whole group has received the name of **The Broken Cave.** None of these ledges are buoyed, as the bare rocks lying close to the edges of the shoals are sufficient guides for avoiding them. ***The Brown Cow.***

In approaching the Sound from the eastward, the first danger met with is Drunker's Ledges; and of these (as before mentioned) there are two distinct ledges. They lie between the bearings of **NE.** by **N.** and **N NE.** from Half-Way Rock, at a distance of two miles. From Mark Island Monument they bear **S.** $\frac{1}{2}$ **E.** and **S.** $\frac{1}{2}$ **W.,** respectively, and are distant from it one mile and a quarter. They lie **SE.** $\frac{1}{2}$ **E.** and **NW.** $\frac{1}{2}$ **W.** from each other, with a fourteen fathom channel, a quarter of a mile wide, between them. The easternmost ledge has four feet at mean low water, and at low spring tides is nearly bare. The western rock is bare at half-tide, and is marked by a spar-buoy painted red and black in horizontal stripes, placed in five fathoms **SW.** of the ledge. ***Drunker's Ledges.***

Passing to the northward of Drunker's Ledges there will be seen, bearing about **E NE.,** a black spar-buoy. This is on Mark Island Ledge, a dangerous sunken rock with three feet at mean low water, which lies **SE.** by **S.** $\frac{3}{8}$ **S.** from Mark Island Monument three-quarters of a mile, and **SW.** by **W.** from Jaquish Island nearly a mile distant. The buoy, which is marked No. 5, is on the western side of the rock, and you must pass well to the westward of it. (See page 436.) ***Mark Island Ledge.***

Whale Rock is also on the eastern side of the channel, and is a bare rocky islet, lying nearly **E.** and **W.,** and about two hundred yards long. It is eight hundred yards **SW.** by **W.** from Mark Island Monument and nearly three miles **N.** by **E.** from Half-Way Rock Light-house, and is tolerably bold-to. After passing it you will approach Eagle Island Ledge, still on the eastern side of the main channel, dry at low water, and two hundred and fifty yards **SE.** $\frac{1}{2}$ **S.** from the southern end of Eagle Island. From the dry rock the shoal ground extends **SE.** three hundred yards and **E.** a quarter of a mile, with from eight to ten feet at mean low water. The eastern extremity of the ledge is nearly a quarter of a mile **SW.** from Haddock Rock, and it is not buoyed. (See page 441.) ***Eagle Island Ledge.***

Off the western shores of Eagle Island, ledges and bare rocks extend three hundred and fifty yards; and from its southern end they extend two hundred yards, and from the northern end three hundred and seventy-five yards. The island must receive a berth accordingly.

On the western side of the channel, just to the northward of The Brown Cow and The Broken Cave, lies another group of ledges and bare rocks, called Mink Rocks, occupying a space three-eighths of a mile long by five hundred yards wide, extending nearly **N.** and **S.,** and are mostly bare at low water,—many of them being always bare. There is no passage between them and The Brown Cow; but a good channel, a quarter of a mile wide and with not less than ten fathoms, exists between them and Bates' Island. ***Mink Rocks.***

SAILING DIRECTIONS

FOR APPROACHING, ENTERING AND PASSING THROUGH BROAD SOUND.

I. ***Coming from the Eastward by the inside channel.***—Bring Half-way Rock Light-house to bear **SW.** and Haddock Rock **W NW.,** with ten fathoms water, and steer for the latter, carrying not less than six and a half fathoms, and passing between Mark Island Monument and Haskell's Island with five and a half fathoms. Continue this course until you are within three hundred yards of Haddock Rock, in seven fathoms, hard bottom, and Half-Way Rock Light-house is over the western end of

Sailing Directions--Broad Sound. Whale Rock on a bearing of S. by W. Now steer N. by W. ½ W. three hundred and seventy-five yards, heading for the western end of Upper Flag Island, and carrying six fathoms water. When the northern end of Eagle Island bears W. and Haddock Rock SW. by S., and there is seven fathoms, hard bottom, steer NW. ¼ N. for the middle of Stockman's Island, carrying not less than eleven fathoms water, until the northeastern end of Ministerial Island bears W., with eighteen fathoms, mud and sand, when steer N. ¾ W. *If bound into Freeport River,* continue this course, carrying not less than fourteen fathoms water. *If bound up Middle Bay,* when the extremity of Basin Point bears E. ¼ S. and the southwestern end of Whaleboat Island N. by E., with fifteen fathoms, soft bottom, steer NE. along the southeastern shore of the latter, with not less than seven fathoms, as far up as Shelter Island. Or you may pass over to the northwestern side of Whaleboat Island on the N. ¾ W. course, and when the southwestern end of Whaleboat Island and the northeastern end of Little Birch Island are in range, with fourteen fathoms, soft bottom, steer NE. ¼ E., passing about midway between Whaleboat and Little Whaleboat islands, and carrying not less than six fathoms as far as Shelter Island. *If bound up Maquoit Bay or Mare Point Bay,* continue the course N. ¾ W., carrying not less than nine fathoms, until you are past Little Whaleboat Island and its northern extremity bears E. ¼ N., three-quarters of a mile off; when there will be nine fathoms, soft bottom, and you must steer NE. for Mare Point, which will lead up to the entrance of either bay with five fathoms water. *If bound to Portland,* when the northern end of Eagle Island bears W. and Haddock Rock SW. by S., with seven fathoms water, steer NW. ¾ W. for the lowest part of Little Bangs Island, carrying not less than eight fathoms, and giving Stave Island Ledge buoy a berth of one hundred and fifty yards to the westward. On this course, when past the buoy and it bears about S. by W., steer W. ½ S. to clear the western end of Little Bangs Island, carrying not less than six fathoms.

To enter Broad Sound by the main channel from the Eastward.—When off the entrance to Quohog Bay bring Mark Island Monument to bear NW. ¾ W. and Half-Way Rock Light-house SW. ¾ W., with seventeen fathoms, soft bottom, and steer W. by N. ¼ N., passing between Mark Island Ledge and Drunker's Ledges, and carrying not less than six fathoms. Continue this course until Eagle Island bears N. ½ E. and Half-Way Rock Light-house S., with fifteen fathoms, dark green mud, when steer N. by W. ¼ W. for the eastern end of Stockman's Island. On this course there is nothing less than ten fathoms water. *If bound up Freeport River,* when the highest part of Eagle Island bears SE. by E. ¾ E., with sixteen fathoms, muddy bottom, steer N. ⅛ E., which will lead you safely up between French and Upper Green islands with not less than ten fathoms. *If bound up Maquoit Bay or Mare Point Bay,* continue this course N. ⅛ E. past Whaleboat and Little Whaleboat islands, and when the northern extremity of the latter bears E. ¼ N., with twelve fathoms, muddy bottom, steer NE. for Mare Point. This course leads with nothing less than five fathoms to the entrance to either bay. *If bound up Middle Bay,* when the highest part of Eagle Island bears SE. by E. ¾ E., as before, steer N. by E. ½ E. for the highest part of the southwestern end of Whaleboat Island until you are within three hundred and fifty yards of it, and you have Basin Point bearing SE. by E. ½ E. On this course there will be nothing less than ten fathoms, and at the bearing thirteen fathoms; and thence the course is NE. up the bay. Or, on the N. ⅛ E. course, continue until the southwestern end of Whaleboat Island and Potts' Point are in range on a bearing of SE. ¾ E. and you are in fourteen fathoms. Then steer NE. ¼ E., passing about midway between Whaleboat and Little Whaleboat islands, and carrying not less than six fathoms to abreast of The Goslings. *If bound to Portland,* when Eagle Island bears N. ½ E. and Half-Way Rock Light-house S., as before, steer N. by W. ¼ W., with nothing less than ten fathoms, until Ministerial Island bears SW. ½ W. and the lowest part of Little Bangs Island NW. ¾ W., with ten fathoms, soft bottom. Now steer that course for Little Bangs Island, giving Stave Island Ledge buoy a berth of one hundred and fifty yards. On this course there will be not less than eight fathoms; and when past the buoy and it bears about S. by W., steer W. ½ S. to clear the western end of Little Bangs Island, carrying nothing less than seven fathoms.

II. ***Coming from the Westward.***—When off Outer Green Island, in fifteen fathoms, with Junk of Pork bearing N. by W. ¼ W., a quarter of a mile off, Half-Way Rock Light-house will bear E. ⅛ S. Steer NE. ¾ E. for Haskell's Island, and continue this course, with not less than fifteen fathoms, until Half-Way Rock Light-house bears S. ½ E. and The Brown Cow W. ½ N.; when there will be thirty-

four fathoms, coarse gravel, and you must steer N. ⅛ E. This course leads, with not less than ten fathoms, as far up as Upper Green Islands, off the entrance to Freeport River. *If bound into Middle Bay;* when, on the N. ⅛ E. course, the highest part of Eagle Island bears SE. by E. ¾ E., as before, steer N. by E. ½ E. for the highest part of the southwestern end of Whaleboat Island. On this course there will be nothing less than ten fathoms water. Continue it until within three hundred and fifty yards of the island and Basin Point bears SE. by E. ½ E., when steer NE. up the bay. (See directions for Middle Bay, given above.) *If bound up Maquoit Bay or Mare Point Bay*, continue the N. ⅛ E. course past the two Whaleboat Islands until the northern extremity of Little Whaleboat bears E. ¼ N. and you are in eleven fathoms, when steer NE. for Mare Point. This course leads up to the entrance to either bay. (See directions for these bays, given above.)

Sailing Directions--Broad Sound.

MIDDLE BAY.

Middle Bay is contained between the western shore of Harpswell Neck on the east and a number of islands in Casco Bay on the west, and on the northeast it is bounded by the mainland. The bay extends NE., is over six miles long from Whaleboat Island to its head, and is a little over a mile wide at its mouth,—the width gradually diminishing to a half mile at Scrag Island, where it unites with Mare Point Bay.

The islands which form the western side of Middle Bay, beginning at its mouth, are Whaleboat, Little Whaleboat, Lower Goose, Upper Goose, Birch, White and Scrag islands. Besides these, three islets lie to the southward of Lower Goose Island, and are connected with it by shoals. They are The Goslings and Irony Island.

The approaches from the westward are mainly through **Luckse's Sound**, a wide and good channel, contained between Long Island and Hope Island on the west and Crotch Island on the east. Northeast of Long Island is Great Chebeag Island, the second island in size in the bay. Northeast of Hope Island is Sand Island, and beyond it Little Bangs and Stockman's islands. Northeast of Crotch Island are Stave, Ministerial and Bates' islands; and south and southeast from it are Inner Green Island and Jewell's Island.

Long Island.

Long Island is two miles long and from half to three-quarters of a mile wide, and lies NE. by E. and SW. by W. The southwestern end of this island is three miles and three-quarters NE. ¼ N. from Portland Head Light-house. The surface is undulating,—the height varying from ten to one hundred feet; and the highest land, one hundred feet above the sea, is at the northeastern end of the island. Long Island is well settled, and much of the land is cleared and cultivated; but the summits are still well wooded with spruce, pine, fir and other trees. Viewed from the southward it presents a hilly and undulating surface, with cleared lands interspersed with groves of trees and dotted here and there with small houses. The southern shore is much cut up by small coves, which, however, are of no importance.

Overset Island.

Two hundred yards to the southward of the western end of Long Island is Overset Island, bare, sixty feet high, and about four hundred yards long. It is bold-to on its southern side, but there is no passage between it and Long Island.

Marsh Island.

Eight hundred yards to the eastward of Overset Island, and nearly three hundred yards from the shore of Long Island, is Marsh Island, an irregularly shaped islet, about three hundred and fifty yards long. Its southern face is about twenty feet above high-water mark and bold-to, but the rest of the island is low. Its surface is entirely bare of trees and in many places under cultivation; and there is no passage between it and Long Island.

Obed's Rock. A very small rocky islet, low and bare, lies NE. ¼ E. from Marsh Island, eight hundred yards off, and is called Obed's Rock. It is six hundred and fifty yards to the southeastward from the Long Island shore, and there is no passage inshore of it; but it is quite bold-to on the off-shore side.

The Stepping Stones.

Near the northeastern end of Long Island, and three hundred and four hundred and fifty yards from its southern shore, are two bare rocky islets, called The Stepping Stones. They lie NW. and SE. from each other, with a narrow passage between them with three fathoms at mean low water; but there is no passage between the inner rock and Long Island. The outer rock is shoal on its southern side and must not be closely approached.

Crow Island, bare, grassy and joined to the shore at low water, lies four hundred yards E. by N. from the northern point of the eastern end of Long Island, and forms the turning-point for vessels using the inside channel through Casco Bay.

Great Chebeag Island.

Great Chebeag Island is, with the exception of Great Island, the largest island in Casco Bay. Its southwestern end is six miles NE. from Portland Head, and the southeastern point, called Deer Point, a little over three-eighths of a mile E NE. from the eastern end of Long Island. Between the two points leads the inside channel through the bay, much used by coasters. Great Chebeag is three miles long with an average width of one mile, lies NE. and SW., and its shores are indented by coves, some of which form good harbors. The land is high, gradually rising towards the centre of the island, where it attains a height of one hundred and eighty feet, thickly settled, and in most places cleared and under cultivation. The northeastern point is called **Chebeag Point**, and is low and cleared, with several houses upon it, and a small hillock upon the extreme point.

Chandler's Cove. The southwestern end of Great Chebeag is deeply indented by a large and commodious cove, called Chandler's Cove, and is thus separated into two points. The southeastern one is Deer Point; the southwestern, Indian Point. **Deer Point** is steep, wooded and sixty feet high, while **Indian Point** is quite low and bare.

On the southeastern face of Great Chebeag, half a mile to the eastward of Deer Point, is a small cove, affording good anchorage in northerly winds, and called **Coleman's Cove.** Next to the eastward, and one mile from Deer Point, is **Johnson's Cove,** large, shallow and of little importance. There are many other indentations in the shore-line of the island, but none of them worthy of note.

Crow Island. The southeastern face of Great Chebeag Island is tolerably bold-to; but the northwestern is shoal, and the approach to it obstructed by bars and ledges. Off the southeastern face, about midway of the island and a quarter of a mile from the shore, is a low bare islet, surrounded by ledges, and known as Crow Island.

Six hundred yards **SW.** by **W.** from Indian Point (with which it is connected at low water by a shingly bar) lies Little Chebeag Island, of moderate height, gently sloping, and bare of trees with the exception of a beautiful grove of spruce, pine and other trees on the summit. Grass-land and cultivated fields form the rest of the island surface, and near the highest part of the land and close to the grove is a large white house surrounded by the usual out-buildings. This is

Little Chebeag Island. used as a family hotel or boarding-house in the summer season, and is the residence of the owner of the island. This place was formerly much resorted to, but is now seldom used, although it is one of the most beautiful islets in the bay. It is triangular in shape, lies nearly **E.** and **W.**, and its southern point is a quarter of a mile **N.** from the northeastern end of Long Island; and the inside channel through the bay leads between them. Its eastern end is six hundred yards from Indian Point, and at low water a bar or reef of shingle joins the two islands. This bar and the island itself form the northern and western shores of Chandler's Cove.

Nearly seven hundred yards to the southeastward of Deer Point lies Hope Island, at the northeastern end and on the northwestern side of Luckse's Sound. It lies **NE.** and **SW.**, is nearly three-quarters of a mile long, with

Hope Island. steep shores, and the land rises to a height of sixty feet,—its surface presenting the appearance of cleared land interspersed with scattered groves of spruce and fir. The shores are bold-to.

Two hundred yards **SE.** from the eastern end of Hope Island is a small grassy islet, called **Rogue's Island,** surrounded by shoals. There is a narrow passage with five fathoms water between it and Hope Island.

On the southeastern side of Luckse's Sound, and a little over half a mile to the southeastward of Hope Island, is Crotch Island, of a very peculiar shape. The main portion lies **NE.** and **SW.**, and is one mile and seven-eighths long and three hundred and fifty yards wide, with an undulating and varied surface,—the heights varying from twenty to eighty feet.

Crotch Island. The southern end is cleared and has one or two houses, but woods occupy a large portion of the remaining surface. But from the southeastern face, nearly five-eighths of a mile below the northeastern end, the island sends out a spur of low grassy land exactly at right angles to the main portion, and terminating in a precipitous head or bluff forty or fifty feet high at a distance of half a mile from the main shore. This bluff at a distance has the appearance of a separate island,—the low land being invisible. This peculiar spur or crotch has given the name to the island.

The main shores of Crotch Island are bold-to except the southwestern point, from which a bad ledge makes off to the southwestward nearly six hundred yards; but the shores of the crotch or spur are surrounded by shoals, ledges and bare rock, rendering it unsafe to approach them. Fishermen, however, who are well acquainted with these dangers, often pass between the hill on the southeastern end of the spur and Jewell's Island; and as there is a bad ledge in the middle of this passage, they hug the Jewell's Island shore.

Jewell's Island lies **SE.** from Crotch Island, three-quarters of a mile from the southwestern end, and **E NE.** from Portland Head, five miles and a half distant. It extends **NE.** and **SW.**, is a mile and an eighth long, and has an

Jewell's Island. average width of five hundred yards. It presents an undulating surface, varying in height from twenty to eighty feet, and mostly wooded; but the southern half of the southwestern end of this island is bare, and backed by trees on the north and west; and the centre is thickly wooded. The northeastern end is deeply indented by a long, narrow and deep cove, forming a good harbor for vessels of light draught, and called **Jewell's Island Cove.**

There is a good channel between Jewell's Island and Inner Green Island, with five fathoms at low water. The two islands are half a mile apart, but the actual channel is not quite three hundred yards in width.

Sand Island. Six hundred yards **NE.** from Hope Island lies a small, low and very narrow islet known as Sand Island, which is entirely bare of trees and covered with grass. Ledges and shoals, bare at low water, extend **NE.** and **SW.** from it three hundred and fifty yards. The inside channel through the bay leads to the northward of this island, between it and Little Bangs Island, and there is also a good channel between Sand and Hope islands.

Passing Sand Island, Little Bangs Island is left to the northward and Stockman's Island to the northwestward; and Whaleboat Island may be left either to the eastward or westward. If the former course be taken, there will be

Little Whaleboat Island. seen, on approaching the northern end of the island, another of very different appearance, bearing about **N NE.** This is Little Whaleboat Island, of irregular shape, moderate height, and wooded with spruce and fir. Long bare ledges and shoals, dry at low water, make off from the southern end to a distance of three-eighths of a mile in a southwesterly direction and half a mile in a westerly direction; and from the northern end ledges extend **N.** nearly a quarter of a mile. There are excellent channels on all sides of it, but its shores are boldest-to on the eastern side.

Lower Goose Island.

Lower Goose Island forms part of the western shore of Middle Bay, lies a mile and an eighth **NE.** by **N.** from Little Whaleboat, and extends in a **NE.** and **SW.** direction for exactly a mile. It is low,—being in no place higher than forty feet above high-water mark, and reaching that height only at the northeastern end. This island is thickly wooded with spruce and fir and surrounded by shoals.

The Goslings.

Two low islets, called The Goslings, lie off the southwestern end of Lower Goose Island at distances of one hundred and fifty and four hundred yards, respectively. The eastern islet is very low and nearly bare of trees, while the western islet is equally low but quite thickly wooded, and both are surrounded by shoals and bare ledges. There is no passage between the two islets, nor between the western islet and Lower Goose Island.

Irony Island.

Two hundred and twenty-five yards to the eastward of the outer Gosling is a very small low islet called Irony Island, only a hundred yards long and not over twenty in width. The eastern side is tolerably bold-to, but on all other sides it is shoal. There is a shoal passage between this island and the outer Gosling, with eight feet at low water, and fit for vessels of light draught, but it is never used.

Upper Goose Island is joined at low water to Lower Goose Island by a dry reef two hundred yards long, with a bare rock in the middle. It lies **NE.** by **N.** and **SW.** by **S.**, and is five-eighths of a mile long, forty feet high and well wooded; and shoals surround it in all directions.

Shelter Island.

In the centre of Middle Bay, and five-eighths of a mile **SE.** from Upper Goose Island, lies Shelter Island, a low thinly wooded islet, lying **NE.** and **SW.**, and about four hundred yards long. It is bold-to except off the northern end, where a ledge makes off in a northerly direction for an eighth of a mile. There are good channels on all sides of Shelter Island, but the best is on its northwestern side, as the other (between it and Harpswell Neck) is full of ledges.

Birch Island.

Birch Island, about a mile long, lies on the western side of Middle Bay, between it and Mare Point Bay. It is about half a mile to the eastward of Upper Goose Island and three-quarters of a mile from the shores of Harpswell Neck, and its surface is undulating. The highest land is on the southeastern side of the island, where it attains a height of between eighty and ninety feet and presents a steep, bluff appearance, with a few houses on the summit and along the shore, and a few scattered spruce and fir trees on the western slope. The western portion of the island is lower,—the highest land being sixty feet near the southern end,—and the two portions are separated by a valley. This western part of the island is wooded, especially towards the northern end, while the southern end has a few scattered trees and houses. Both shores are indented by coves.

A good channel, with six fathoms water, leads between Upper Goose Island and Birch Island into Mare Point and Maquoit bays.

A small, low, grassy islet a quarter of a mile **NE.** from Birch Island is called **Little Birch Island.**

White's Island.

Six hundred yards **NE.** from Birch Island, and connected with it at low water by a bare flat with ledges, is White's Island, low, bare and grassy, lying **NE.** and **SW.**, three-quarters of a mile long and about twenty feet high. The shores rise abruptly to that height, and the summit is a level plain, bare of trees. All of the islands from Birch Island to the northward are connected with Mare Point Neck and the mainland by dry flats.

Scrag Island.

Three islets, low and bare of trees, lie on these flats,—the southernmost, called **Little Iron Island,** being nearly three hundred yards **E.** from the southern end of White's. It is a little over a hundred yards long, and lies near the eastern edge of the flats. The largest of the three is called Scrag Island, and is two hundred and seventy-five yards to the northeastward of Little Iron Island and three hundred yards to the eastward of White's. It is over six hundred yards long and not quite a hundred wide, and is low and grassy. The northernmost, which is called **Crow Island,** is a little over a hundred yards square, lies two hundred and seventy-five yards south of **Miller's Point,** (on the mainland,) and seven hundred yards **NE.** from White's Island.

Barnes' Island.

The western shores of Harpswell Neck present a somewhat different appearance from the eastern slopes. They are more regular, not so much cut up by coves, and are, as a rule, steeper and more thickly settled. Five-eighths of a mile above Basin Point is a small low island, with a few trees upon it, lying close to the shore, with which it is connected at low water. This is Barnes' Island; and just above it is a small semicircular indentation in the shore-line, of no importance, and called **Old Cove.**

Peter's Cove.

Passing along the low land to the northward of Old Cove, you will approach the highest slopes; and under the wooded sides of the hills (which here rise to a hundred feet) is a comfortable anchorage for light-draught vessels, called Peter's Cove. It makes in a southwesterly direction between the high land on the east and the low grassy point, with one or two houses on it, which marks the northern limit of the low lands; and is only fit for vessels drawing six feet and under.

White's Point.

Passing along the shore, (which now presents the appearance of cleared and cultivated lands, interspersed with groves of trees and thickly wooded hills,) and half a mile above Peter's Cove, you come to a low bare point, called White's Point. A hillock with precipitous face on the northern shore of the point will serve to distinguish this from any other projection.

The Lookout.

One mile and a quarter above White's Point a long, low, bare point makes out from the shore in a northerly direction, called The Lookout; and the land at this point is quite thickly settled. The Lookout is exactly

opposite the southern end of Birch Island; and about half a mile above it is a wide and tolerably deep cove, called **Wilson's Cove.** The northern side of this cove is marked by a steep hill, which is one hundred and forty feet above sea-level and almost entirely bare of trees.

One mile above Wilson's Cove is **Jordan's Point,** low and bare, with one or two houses on it; and half a mile above this is **Barnes' Point,** also low, as is all of the land at this point. Above this begins **Middle Bay Cove,** bare at three-quarters ebb.

DANGERS

IN APPROACHING AND ENTERING MIDDLE BAY.

The dangers in the approaches to this bay from the eastward through Broad Sound have been already described on page 443. In approaching from the westward, through Luckse's Sound the first obstruction met with, after passing the entrance to Portland, is *Hussey Rock*, or

The Hussey. The Hussey, as it is often called. (Both names are used.) This dangerous sunken rock is almost exactly in the middle of the channel and has twelve feet upon it at low water. It bears **NE.** by **E.** $\frac{3}{4}$ **E.** from Portland Head Light-house, and **E.** $\frac{3}{4}$ **N.**, two miles and an eighth from White Head. From the southwestern end of Crotch Island it bears **SW.** $\frac{3}{4}$ **W.**, distant two miles. This ledge is marked by a can-buoy of the second class, painted red and black in horizontal stripes. The rock is bold-to, and the buoy may be approached quite closely with seven fathoms water. (See page 437.)

Passing The Hussey the course leads to the northeastward between Crotch Island and Long Island, then between Crotch and Hope islands, and to the **NE.** between Stave Island and Little Bangs Island, and between the two Whaleboat islands into the bay.

Crotch Island Ledge. There are no dangers in the channel until you are past Little Whaleboat Island; but vessels beating in will beware of the shoal water to the southwestward of Crotch Island, called Crotch Island Ledge. It has three feet upon it in places, and the southwestern point of the reef is a quarter of a mile **SW.** from the island. It is not buoyed, but a buoy has been recommended. There is no passage between this ledge and Crotch Island.

The Stepping Stones should not be approached too closely from the southward, as there is *a ledge with three feet at mean low water* about one hundred and fifty yards **S.** from the southernmost one. It is not buoyed. (See page 445.)

Long bars make off from Sand Island both **NE.** and **SW.** From the southwestern end the bar extends **SW.** nearly four hundred yards, and is bare at low water. From the northeastern end the shoal, which is called *Sand Island Ledge*, extends nearly a quarter of a mile in a **NE.** direction, and is marked by a black spar-buoy (No. 1), (see page 441,) which is a guide to vessels coming from the eastward through the inside channel. Vessels bound to the eastward leave it to the southward and westward.

Stave Island Ledge lies on the eastern side of the channel, and is not dangerous except to vessels beating in or out. It is also marked by a black spar-buoy (No. 3) placed in eighteen

Stave Island Ledge. feet water off the end of the shoal. This buoy is left to the southward. Stave Island Ledge is bare at low water, and lies a quarter of a mile **NE.** from the long rocky point on the northeastern end of Stave Island. (See page 441.)

Birch Island Ledge lies on the southeastern side of the eastern channel, is bare at three-quarters ebb, and lies nearly six hundred yards **N.** from the northeastern end of Little Birch

Birch Island Ledge. Island. There is a good channel between the ledge and the island with nine fathoms water, but it is not safe for strangers. The ledge is not buoyed, but always shows itself either by breakers or the bare rock. It is easily avoided by keeping the Whaleboat Island shore aboard.

The northwestern shores of Basin Point are shoal from Barnes' Island nearly to the pitch of the point. *Flats, ledges and bare rocks* are scattered all along the line from Barnes' to Little Birch Island. The rule for vessels beating in or out is not to go to the eastward of Barnes' Island bearing **NE.** by **E.** until up with the island.

After passing Barnes' Island the shores are bold-to and the channel clear until the eastern and western channels unite above Whaleboat Island.

In the western channel, vessels beating up will find the shores bold-to until they are past the southwestern point of Whaleboat Island, when they must keep the latter shore a little more

Whaleboat Ledge. aboard, (not standing too far to the westward,) to avoid Whaleboat Ledge, or *Whaleboat Island Ledge*,—a small rock, with nine feet at mean low water, lying nearly three-quarters of a mile **NW.** by **N.** $\frac{1}{2}$ **N.** from the southwestern point of Whaleboat Island and one mile **SW.** $\frac{1}{2}$ **W.** from Little Whaleboat Island. A red spar-buoy (No. 12) is placed in four fathoms on the western side of the ledge, and is a guide to Yarmouth and Freeport rivers. By vessels bound up Middle Bay it is to be left to the northward and westward. This ledge has only seven feet on it at low spring tides.

Little Whaleboat Ledge, three-eighths of a mile **NE.** $\frac{1}{2}$ **E.** from Whaleboat Ledge, is awash at low spring tides. From Little Whaleboat Island it is distant three-quarters of a mile, and it is not buoyed.

The line of ledges and bare rocks which extends in a **SW.** direction from Little Whaleboat Island a distance of nearly half a mile are very dangerous, as they are entirely bare at low water and many of the rocks are always out. ***Dangers---Middle Bay.***

There is from eight to twelve fathoms between and on all sides of the two Whaleboat Ledges, and a channel with six fathoms between Little Whaleboat Ledge and the ledges making off from the island. Strangers, however, must not attempt either of these passages.

On the western side of Little Whaleboat Island there are also extensive ledges and shoals, and the island should receive a berth to the eastward of not less than half a mile from vessels bound up Mare Point or Maquoit bays.

The Goose Nest is a bare rocky islet about six hundred yards **N.** from the eastern end of Little Bangs Island and the same distance **NW.** from Stockman's Island. There is an excellent channel between this rock and the above-named islands, but on its northern side ledges and shoals, some bare at half-tide and some at low water, extend in a **N.** by **E.** direction for three-eighths of a mile, and are not buoyed. Vessels standing across the northern end of The Goose Nest must give it a berth to the southward of not less than half a mile. ***The Goose Nest.***

Goose Ledge is a small ledge, with four feet at mean low water, lying between Little Whaleboat Island and The Goslings,—three-eighths of a mile **SW.** by **S.** from the latter,—and there are from seven to nine fathoms water all around it. It is not buoyed, but is not in the way except for vessels beating up, or those who use the passage between The Goslings and Little Whaleboat Island into Maquoit and Mare Point bays. ***Goose Ledge.***

Grassy Ledge is a bare ledge, about a quarter of a mile long, which lies nearly three-eighths of a mile **NE.** by **N.** from Irony Island and six hundred yards **SE.** from the shore of Lower Goose Island. There is good water on all sides of it and it is tolerably bold-to. It is easily avoided,—being always visible. ***Grassy Ledge.***

Abreast of Shelter Island, and close in with the shore of Upper Goose Island, lies another ledge, bare at half-tide, called *Branning's Ledge.* It lies two hundred and fifty yards from the shore of Upper Goose Island and is not buoyed. A channel with twelve feet exists between the ledge and the island.

The northeastern end of Shelter Island has *a bare ledge* lying a hundred and fifty yards **N NE.** from it, and should receive a berth to the southward of at least two hundred yards.

In the eastern channel, and abreast of Shelter Island, there is a line or group of ledges, bare at low water, extending in an **E NE.** direction half a mile, and called Brant Ledges. The southwestern end of this reef is marked by a large bare rock about six hundred yards to the southeastward of Shelter Island and about seven hundred yards from the shore of Harpswell Neck. The water is very shoal between the various bare rocks. There is a narrow channel between the Brant Ledges and Harpswell Neck, with three and a half fathoms, but it is not safe for a stranger. ***Brant Ledges.***

Seven hundred yards above the western end of the Brant Ledges is a bare rock, very bold-to, called Black Rock. It is almost exactly in the middle of the passage,—bearing from Shelter Island **E NE.** nearly half a mile distant. ***Black Rock.***

Two hundred yards **E NE.** from Black Rock is *another ledge* about two hundred and fifty yards long, which has *nine feet* at mean low water, and is not buoyed. There is five fathoms water between it and the Brant Ledges, and vessels may use either the channel between Shelter Island and Black Rock or between this ledge and Brant Ledges; but the former is preferable.

Half a mile above the southwestern point of Birch Island, and three hundred yards from the shore, is *a ledge, bare at extreme low tides,* not named nor buoyed, nor is it in the way except for vessels beating in and out. It is nearly opposite to The Lookout on Harpswell Neck,—the channel leading between them.

Above The Lookout the shore of Harpswell Neck is shoal; and vessels drawing twelve feet water should not approach it nearer than three hundred yards until they are up with Wilson's Cove, half a mile above The Lookout. Here they should not approach nearer than seven hundred yards; and when near the upper side of the cove they must keep nearly half a mile off, to avoid Wilson's Ledges, a dangerous group, bare at low water and about seven hundred yards long, lying **NE.** and **SW.** along the shores of the neck, and near the upper end of Wilson's Cove. The southwestern end of this line of rocks is about seven hundred yards from the shore of the cove, and the eastern end extends nearly to the shore. These ledges are not buoyed. ***Wilson's Ledges.***

Above Wilson's Ledges the flats begin; but there are no rocks in the channel, and the flats show themselves at low water. The chart and lead are here the best guides for a stranger. Vessels drawing twelve feet cannot pass above Scrag Island, either to **Pennell's** or **Dunning's Wharf,** at low water. Dunning's may be reached at high water, but there is never more than ten or eleven feet at Pennell's Wharf at the top of the tide.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MIDDLE BAY.

I. ***Coming from the Eastward, through Broad Sound.***—The dangers in this passage have been already described on page 443, under the approaches to Broad Sound. Vessels bound for Middle Bay from the eastward must, when off the entrance to Quohog Bay, bring Mark Island Monument to bear **NW.** ¾ **W.** and Half-Way Rock Light-house **SW.** ¾ **W.**, with seventeen fathoms, soft bottom, and steer **W.** by **N.** ¼ **N.**, passing between Mark Island Ledge and Drunker's Ledges, and carrying not less than six fathoms water. Continue this course until Eagle Island bears **N.** ½ **E.** and Half-Way Rock Light-house **S.**, with fifteen fathoms, dark green mud, when steer **N.** by **W.** ¼ **W.** for the eastern end of Stockman's Island. On this course there will be nothing less than ten fathoms water, and when the highest part of Eagle Island bears **SE.** by **E.** ¾ **E.**, with sixteen fathoms, muddy bottom, steer **N.** by **E.** ½ **E.** for the highest part of the southwestern end of Whaleboat Island. Continue on this course, with nothing less than ten fathoms water, until you are within three hundred and fifty yards of the island and Basin Point bears **SE.** by **E.** ½ **E.**; when there will be thirteen fathoms, and you may steer **NE.** ¼ **N.** up the bay. This course will lead clear of everything, with not less than six fathoms water, until you are abreast of The Lookout, when steer **NE.** by **E.** for Barnes' Point until you are abreast of the southwestern end of Scrag Island. On this course there will be not less than sixteen feet water. Then, if bound for Dunning's, steer **NE.** by **N.** ¾ **N.**, having the wharf a little to the northward; but no detailed directions can be given above Scrag Island, and the chart will be the best guide.

The above courses pass nearly three hundred yards to the westward of Brant Ledges; about one hundred and fifty yards to the westward of Black Rock; one hundred and fifty yards to the eastward of the ledge to the southeastward of Birch Island; and nearly four hundred yards to the westward of Wilson's Ledges.

At night a vessel entering to make a harbor must not, when steering for Whaleboat Island, shut Half-Way Rock Light-house in behind Little Birch Island, but must keep it open a little to the westward. This will lead clear of Birch Island Ledge.

Vessels of the largest draught may pass the southwestern end of Whaleboat Island close-to, and enter the bay by the passage between the two Whaleboat Islands.

There is still another channel from the Eastward leading into Middle Bay, (through Broad Sound,) which may be used by following the directions given below: Bring Half-Way Rock Light-house to bear **SW.** and Haddock Rock **WNW.**; when you will be in ten fathoms, hard bottom, and Mark Island Monument will bear **W.** by **N.** ½ **N.** Now steer **W NW.**, passing between Haskell's Island and the Monument with not less than five and a half fathoms, and continue the course until you are within three hundred yards of Haddock Rock and Half-Way Rock Light-house is over the western end of Whale Rock on a bearing of **S.** by **W.**, when there will be seven fathoms. Now steer **N.** by **W.** ½ **W.** for three hundred and seventy-five yards, heading for the western end of Upper Flag Island, and carrying seven fathoms. This carries you through between Haddock Rock and Haskell's Island. On this course, when the northern end of Eagle Island bears **W.** and Haddock Rock **SW.** by **S.**, with seven fathoms, hard bottom, steer **NW.** ¼ **N.** for the middle of Stockman's Island until the northeastern end of Ministerial Island bears **W.** On this course there will be not less than ten fathoms, and at the bearing seventeen fathoms. Then steer **N.** ¾ **W.** until Basin Point bears **E.** ¼ **S.**, and you are three hundred and fifty yards **S.** by **W.** from the southwestern end of Whaleboat Island. On this course you will carry nothing less than fifteen fathoms, and at the bearing there will be the same depth. Then steer **NE.** ¼ **N.** up the bay. (See directions given above.)

This entrance can only be used in day-time. It is then an excellent channel, and is much used by fishermen and coasters.

II. ***Coming from the Southward or from Seaward.***—Pass a third of a mile **W.** from Half-Way Rock Light-house, in about twenty fathoms, and steer **N.** ⅛ **E.** This course leads you clear of everything into Broad Sound with not less than twenty fathoms. Continue it, with not less than eleven fathoms, until Half-Way Rock Light-house bears **S.** ½ **E.**, Mark Island Monument **SE.** ¾ **S.**, and Basin Point **E.** ¾ **N.**, with fourteen fathoms, soft bottom; when steer **NE.** ¼ **N.** up the bay. Or, continue the course **N.** ⅛ **E.** past the southwestern end of Whaleboat Island until Mark Island Monument is shut in behind Upper Flag Island, carrying on this course not less than fourteen fathoms; when steer **NE.** ¼ **E.**, which course will lead you, with not less than six fathoms, up the western channel to Shelter Island.

III. ***From the Westward, through Luckse's Sound.***—When off Cape Elizabeth, in seventeen fathoms water, with the eastern light bearing **NW.** ¼ **N.**, one mile and an eighth distant, Portland Head Light-house **N.** ⅜ **W.**, and Half-Way Rock Light-house **NE.** by **E.** ¼ **E.**, steer **NE.** by **N.** ½ **N.**, carrying not less than nine fathoms water. Continue this course (which leads between Outer Green Island and The Hussey) until Half-Way Rock Light-house bears **SE.** by **E.** ⅛ **E.**, seen between Inner Green Island and the southwestern end of Jewell's Island, and you are in sixteen fathoms. Now steer **NE.** ½ **E.**, which leads you clear of all dangers, and in not less than five fathoms, up the western channel to Stockman's Island. When exactly abreast of the northern end of that island, in twelve fathoms water, steer **NE.**, which will lead safely, with not less than six fathoms, up to Shelter Island. On this course continue until you are well past the island and the extreme northeastern point of Upper Goose Island bears **NW.**; when steer **NE.** by **E.** ½ **E.** until The Lookout is abeam, from which point **NE.** by **E.** leads clear of Wilson's Ledges. Then follow the directions on the preceding page. ***Sailing Directions--Middle Bay.***

These courses leave The Hussey to the westward six hundred yards; Whaleboat Ledge and Little Whaleboat Ledge to the westward six hundred and fifty yards; and Grassy Ledge and Branning's Ledge about seven hundred yards to the westward. This is a perfectly safe channel.

IV. ***Bound into Middle Bay from Portland Harbor.***—1. ***By way of Whitehead Passage:*** Having come through the Whitehead Passage, steer **E.** ½ **S.**, carrying not less than nine fathoms water, until Portland Head Light-house bears **SW.** by **W.** ½ **W.**, seen over the middle of Ram Island. Now, in fifteen fathoms, steer **NE.** ½ **E.** up the Sound, and proceed as above directed.

This course leaves The Hussey about seven hundred and fifty yards to the eastward.

2. ***By the inside channel, through Casco Bay.***—Vessels using this channel pass to the northward of Long Island, and between its eastern end and Deer Point, (the southern end of Great Chebeag,) in from four to seven fathoms water. When abreast of Deer Point, having it bearing due **N.** and about one hundred and fifty yards off, in about ten fathoms, soft bottom, steer **E NE.** towards Little Bangs Island. On this course there is nothing less than nine fathoms; and when you are about half a mile along the southeastern shore of Great Chebeag, and the extreme eastern point of Hope Island bears **SE.** ¾ **E.**, with ten fathoms, soft bottom, steer **NE.** by **E.**, passing between Great Chebeag and Little Bangs Island and between The Goose Nest and Stockman's Island, and carrying not less than eighteen feet, which will be found in one spot off Johnson's Cove. Continue this course up between the two Whaleboat Islands, and when abreast of the southwestern end of Little Whaleboat steer **NE.**, and follow the directions given above for the western channel.

These courses pass a quarter of a mile to the northward of the black buoy on the shoal to the northward of Sand Island; two hundred yards to the southward of The Goose Nest; about five hundred yards to the southward of Whaleboat Ledge; and three hundred and fifty yards to the southeastward of Little Whaleboat Ledge.

MARE POINT AND MAQUOIT BAYS.

Mare Point Bay is contained between White's and Birch islands on the southeast, and a long narrow neck or peninsula of the mainland, called Mare Point Neck, on the northwest. It is properly a cove, and not a bay, being of small dimensions. The head of the bay is formed by the mainland; and here a creek, dry at low water, and called **Miller's Creek**, empties into the bay. Thus formed, this cove or bay extends in a **NE.** by **E.** direction for a length of two miles and five-eighths, and with an average width at high water of about seven hundred yards. At low water its length to the edge of the dry flats is a mile and a quarter. Nine feet at low water may be carried up to the edge of the flats through a very narrow channel.

Mare Point Neck is a narrow peninsula making out in a **SW.** by **W.** direction from the mainland for a distance of three miles. Its surface is undulating,—the heights varying from forty to eighty feet. The shores have easy slopes except at **Mare Point**, its southwestern extremity, where there is a tolerably steep bluff about sixty feet high. On this bluff are a few spruce and fir trees. Viewed from the southward and westward, however, it appears almost bare, as the trees are rather on the northern slope of the hill. Mare Point Neck is composed mostly of cleared and cultivated lands. These are interspersed with small groves of trees, and scattered trees dot the surface here and there. Its western shores are tolerably well settled, and are steeper on the Maquoit Bay side than on the eastern shore. **Mare Point Neck.**

The shores of Birch Island (which bounds Mare Point Bay on the southeast) present, when viewed from the southwestward, a different appearance from that presented to one coming up Middle Bay. While, in the latter case, the steep bluff eighty feet high, and with only a few trees upon it, on the eastern shore of the island, forms a very prominent mark in coming up the bay, on the western shores the land is only about forty feet high, with a very gentle slope, bare of trees with a very few exceptions, and with one or two houses near the highest part; but the **Birch Island.**

northern side is lower, and covered with a thin growth of spruce and fir. These trees do not appear except at intervals, when the island is viewed from the approaches to Mare Point; but in coming up the western channel into Middle Bay they show over the low land connecting the two parts of the island.

Mare Point Bay may be entered: First, by the passage leading from Middle Bay between Birch and Upper Goose islands; secondly, by the passage between Lower Goose Island and Little Whaleboat; thirdly, by the Broad Sound passage, and thence by the channel between Lower Goose Island and French Island; fourthly, by the passage between Littlejohn's Island and Great Chebeag, and thence between French Island and Bibber's Island; fifthly, by the channel along the southern face of Great Chebeag; and sixthly, by Luckse's Sound, between Little Bangs Island and Stave Island, and thence to the northward along the northeastern shore of Stockman's Island. Most of these channels are common to Mare Point and Maquoit bays.

Maquoit Bay is contained between Mare Point Neck and the mainland. It lies **NE.** and **SW.**, is three and three-quarter miles long, and about a mile and a quarter wide at high water in its widest part. At low water the channel for vessels of six or seven feet draught is not over seven hundred yards wide,—all the rest of the bay being occupied by flats nearly bare at low water.

Little Flying Point. The entrance is between Mare Point on the east and a low bare point of the mainland, called Little Flying Point, on the west. There are several islands off the mouth, and the passages leading to the bay are full of islands. Little Flying Point is in reality a small, low, grassy island of triangular shape, connected with the mainland at low water. Its southeastern face is tolerably bold-to.

On the northwest the mainland presents the appearance of a hilly country, the slopes cleared and cultivated, and studded with houses near the summits, and the whole backed by woodlands covering the crests of the hills. Sailing along the northwestern shore of the bay it will be seen that the hills are cut up by ravines intersecting them at short intervals. Especially is this the case at the head of the bay, where the shore-line is cut up by numerous creeks, all bare at low water, and most of them already filling up with marsh and salt-meadow grass.

The land to the northward of the head of the bay is high, in some places forming hills from one hundred and fifty to two hundred feet high. In the immediate vicinity of the shore-line it forms plateaux not over forty feet high, partly cleared and thinly settled,—the cleared spaces alternating with groves of trees.

Bunganuc Landing is the settlement on Maquoit Bay. It is a hamlet built on the shores of a small creek which empties into the bay on its northern shore two miles above Little Flying Point. Vessels are sometimes built here; but the creek is dry at low water, as indeed is the greater portion of the bay.

Westward of Little Flying Point the shore curves away to the westward and round to the southward and eastward, forming a shallow cove not quite three-quarters of a mile wide. The western point of this cove is about twenty feet high with a very few scattered trees upon it, but mostly cleared and cultivated. Houses appear on the summit of the land

Flying Point. behind this point, and the shore-line, taking an abrupt turn to the westward, runs about **SW.** by **W.** for a little over a mile to a long, low, bare point, called Flying Point. There are a few trees on the shore, but the point itself has none. From Flying Point it again turns sharply to the **NE.** and joins the mainland a mile and a half above the point, thus forming a long irregularly shaped peninsula of low land, called **Flying Point Neck.**

Westward of Flying Point is the entrance to Freeport River.

In approaching and entering Mare Point and Maquoit bays the courses lead among the islands already described in the directions for Broad Sound and Middle Bay. But, on coming near the entrance to the bays, after passing Stockman's Island, there will be seen to the northward, and lying to the westward of Goose Islands, a small bluff island

French Island. crowned with spruce and fir trees and about forty feet high. This is French Island, and is uninhabited. It lies **NE.** and **SW.**, is about three-eighths of a mile long, and a little over two hundred yards wide at its widest part. Its southern shores are bold-to, but the northern shore is shoal, rocky and dangerous. From the northeastern point of the island bare rocks, rocky islets and ledges extend in an **ENE.** direction about seven hundred yards. The northern shore of French Island should not be approached nearer than five hundred yards, and its northeastern end should receive a berth to the westward of half a mile.

SW. from French Island, a little over half a mile distant, lie two very small, bare, rocky islets, united at low water, called Upper Green Islands. From Chebeag Point they bear **NE.** seven-eighths of a mile distant. They are quite

Upper Green Islands. bold-to on their southern and eastern sides, but on the western side, although quite as bold-to as on the others, the approach to them is obstructed by a sunken ledge, called **Green Island Ledge,** which has only six feet at mean low water. It is, however, marked by a buoy.

The main channel into Freeport River from the southward leads between French Island and the Upper Green Islands with seven fathoms at low water.

The course leads between Lower Goose Island and French Island; and passing to the northeastward of the latter there will be seen to the northward, and about three-quarters of a mile off, an island lying **ENE.** and **WSW.**, (with a very few scattered spruce trees upon its surface,) which is nowhere over forty feet high. This is Bibber's Island; and Flying

Bibber's Island. Point will be behind it, but will very soon open to the eastward of it. Four small islands will appear in a line abreast, spreading out from its eastern end in a line about **ENE.** These are all rocky and mostly bare, though one or two have a very few trees upon them. Two or three houses will appear on the southern face of Bibber's Island, near the shore. The island is on the northwestern side of the entrance to Mare Point and Maquoit bays, and on the eastern side of the approach to Freeport River.

The first of the small islands to the eastward of Bibber's Island is bare and rocky, and is called, with the outlying rocks surrounding it, **The Sow and Pigs**. It is connected at low water with the shore, from which it is distant nearly seven hundred yards, and is three hundred and fifty yards from Bibber's Island.

Pettingill's Island, the next to the eastward, lies two hundred and fifty yards to the eastward of The Sow and Pigs, and is also connected with Flying Point Neck at low water. It is forty feet high and bare of trees. **Pettingill's Island.**

Next to the eastward of Pettingill's Island appears a somewhat larger one, lying **NE.** and **SW.**, about six hundred and fifty yards **E.** by **N.** from Pettingill's Island and nearly half a mile from the shore. This is William's Island, which is low (being in no place over twenty feet in height) and bare, except for a few spruce and fir trees on its northern face near the summit. Its southern face is very bold-to, and vessels of heavy draught may go almost up to the rocks; but there is no passage on the northern side. A good channel, with sixteen feet at low water, exists between this island and the easternmost of that group which lies a quarter of a mile to the eastward, and is called Sister Island. It is small and low, its northern face only showing a precipitous front twenty feet high, and a few scattered trees appear on the surface. It is **NNW.** from the northern end of Upper Goose Island, from which it is distant half a mile. The channel leads between them, and the shores on either side are bold-to. **William's Island.** **Sister Island.**

Mare Point is distant from Sister Island five-eighths of a mile, (about twelve hundred yards.) The channel into Mare Point Bay leads to the eastward of the point, between it and **Birch Island**, (which is the large island, with a few trees in groups here and there, which is seen just to the eastward of Mare Point.)

The channel into Maquoit Bay leads along the western side of Mare Point to the northward, between it and Sister Island.

DANGERS

IN APPROACHING AND ENTERING MARE POINT AND MAQUOIT BAYS.

I. ***Coming from the Eastward, through Broad Sound.***—A vessel bound into either of these bays by way of Broad Sound would, if coming from the eastward, fall in with Half-Way Rock Light-house, and bring it to bear **SW.** $\frac{3}{4}$ **W.**, a little over three miles distant, and steer **W.** by **N.** $\frac{1}{4}$ **N.** On this course the first danger met with is Mark Island Ledge, lying **NE.** by **N.** from Half-Way Rock, two miles and three-quarters distant, and **SE.** by **S.** $\frac{3}{8}$ **S.** from Mark Island Monument, three-quarters of a mile. It is dry at extreme low tides. A black spar-buoy (No. 5) is placed on the western side of it, and must be left to the northward by vessels coming from the eastward through this channel. ***Mark Island Ledge.***

Opposite to Mark Island Ledge, and in range between it and Half-Way Rock, on a bearing **SW.** by **S.**, lie two ledges at a distance of three-quarters of a mile from the buoy on Mark Island Ledge, and called Drunker's Ledges. They lie **NW.** and **SE.** from each other, with good water between them. The northwestern ledge is bare at half-tide, and is marked by a buoy painted red and black in horizontal stripes. The southeastern one has four feet at mean low water and is not marked. The channel into Broad Sound from the eastward leads between Mark Island Ledge and Drunker's Ledges. ***Drunker's Ledges.***

When past Drunker's Ledges continue the course towards the entrance to Broad Sound, and then turn to the northward, leaving Eagle Island to the eastward. The first obstruction met with is on the eastern side of the channel as you approach Eagle Island, and is called Eagle Island Rock. It is dry at low water and lies two hundred and fifty yards **SE.** $\frac{1}{2}$ **S.** from the southern end of Eagle Island; and from the dry rock the shoal ground extends **SE.** three hundred yards and **E.** a quarter of a mile, with from eight to ten feet at mean low water. Its eastern end is nearly a quarter of a mile **SW.** from Haddock Rock, and it is not buoyed. ***Eagle Island Rock.***

From the southern end of Eagle Island shoal ground extends in a southwesterly direction for nearly two hundred and twenty yards. It is called *Eagle Island Point* and has no buoy. To avoid it vessels must give the island a berth of about three hundred yards.

Continuing the course to the northward, you will leave Bates' and Ministerial islands to the westward and Little Birch and Whaleboat islands to the eastward, passing between the last named and Stockman's Island. The red spar-buoy seen about half a mile to the northward is on Whaleboat Ledge, which has nine feet at mean low water and about seven at low spring tides. Vessels which pass up Middle Bay pay no attention to it; but those which are bound into Freeport River, or up Maquoit or Mare Point bays, leave it to the westward, close-to, and Little Whaleboat Ledge to the eastward. The channel here is not wide, but deep, and the ledges are bold-to. Whaleboat Ledge is a pinnacle rock of small extent, and lies three-quarters of a mile **NW.** by **N.** $\frac{1}{2}$ **N.** from the southwestern point of Whaleboat Island and one mile **SW.** $\frac{1}{2}$ **W.** from Little Whaleboat Island. A red spar-buoy (No. 12) is placed on the western side of the ledge in four fathoms, and you must pass to the eastward of it,—giving it a berth of about two hundred yards. ***Whaleboat Ledge.***

Little Whaleboat Ledge. Little Whaleboat Ledge lies three-eighths of a mile **NE.** ½ **E.** from Whaleboat Ledge, is awash at low spring tides, and is not buoyed. From Little Whaleboat Island it is distant three-quarters of a mile.

When you are three-quarters of a mile to the northward of Whaleboat Ledge the course leads to the northeastward, in the direction of Mare Point; and care must be taken not to make this turn too soon after passing the buoy, to avoid *the line of ledges and bare rocks* which extends from Little Whaleboat Island to the westward a distance of half a mile. Most of them are bare at low water, and some are always out, forming rocky islets.

French Island Reef. French Island Reef is the long line of bare rocks which extends from the northeastern point of French Island in a **NE.** by **E.** ½ **E.** direction for nearly three-eighths of a mile. It is quite bold-to, and but little in the way; but due **N.** from the eastern end of the reef, at a distance of a quarter of a mile, lies another group of rocks, bare at low water, surrounding several small, bare, rocky islets. This is *Bibber's Ledges*, or *Bibber's Rocks*. It is three hundred and fifty yards long in a **NW.** and **SE.** direction, lies in the middle of the passage between Bibber's Island and French Island, and is not buoyed, as it always shows itself.

Sister Island Ledge. In Maquoit Bay, one hundred and seventy-five yards due **N.** from Sister Island, is a bare ledge, called Sister Island Ledge, with good water on all sides of it.

Flats with less than five feet at low water extend off from the northwestern shore of Mare Point Neck into Maquoit Bay for an average distance of half a mile. From the mainland on the northern shore of the bay *flats, bare at low water,* extend off to the southward three-eighths of a mile. Thus the channel is narrowed to a very small compass; but at low water the flats on the northern side are bare, and, as they are also bold-to, vessels by keeping the edge of them aboard will avoid the more dangerous ones on the southern side.

Bunganuc Rock. Bunganuc Rock is a bare rock, lying on the flats half a mile **S.** from Bunganuc Landing. Vessels bound up to the landing leave it well to the eastward.

In Mare Point Bay the flats begin about half way up the bay on the Mare Point side, and extend off to the southward a quarter of a mile; but the southern shore is bolder. There are no obstructions except the flats.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MARE POINT AND MAQUOIT BAYS.

I. ***Coming from the Eastward, through Broad Sound.***—Bring Half-Way Rock Light-house to bear **SW.** ¾ **W.**, a little over three miles distant, and Mark Island Monument **NW.** ¾ **W.**, with seventeen fathoms, soft bottom, and steer **W.** by **N.** ¼ **N.**, passing between Mark Island Ledge and Drunker's Ledges, and carrying not less than six fathoms water. Continue this course until Eagle Island bears **N.** ½ **E.** and Half-Way Rock Light-house **S.**, with fifteen fathoms, dark green mud, when steer **N.** by **W.** ¼ **W.** for the eastern end of Stockman's Island. On this course there will be nothing less than ten fathoms water, and when the highest part of Eagle Island bears **SE.** by **E.** ¾ **E.**, with sixteen fathoms, muddy bottom, steer **N.** ⅛ **E.**, and so continue, (with not less than eleven fathoms,) past Whaleboat Island, between the two Whaleboat Ledges, and until Mare Point bears **NE.**, when you will be in eleven fathoms and must steer for the point. On this course there will be not less than four and a half fathoms; and when you are abreast of the eastern end of Sister Island, having it bearing **NW.** ¼ **W.**, with four and a half fathoms water, *and bound up Maquoit Bay,* steer **N.** by **W.** ⅛ **W.** for Little Flying Point, carrying not less than three fathoms. When within four hundred yards of the point, in three fathoms, soft bottom, steer **NE.** ¼ **N.** for about one mile, or until Bunganuc Rock bears **NE.** by **E.**, when, *if bound to the landing,* continue the course **NE.** ¼ **N.** across the flats until the middle of the entrance bears **N.** by **E.** ¼ **E.**, when steer that course. This course can be used only at high water. But, *if bound up towards Wharton's Point,* when Bunganuc Rock bears **NE.** by **E.**, as before, steer **E.** by **N.** ¾ **N.**, which will lead you up to the point; but you must not cross the flats except at high water.

If bound into Mare Point Bay, when abreast of the eastern end of Sister Island, having it bearing **NW.** ¼ **W.**, as before, steer **E NE.** towards White's Island, carrying seventeen feet water. When within a quarter of a mile of this island, steer about up the middle of the passage; but no sailing directions can be given above this point,—the bay being bare at low water.

The above courses pass a quarter of a mile to the southward of Mark Island Ledge; nearly half a mile to the northward of Drunker's Ledges; two hundred yards to the westward of Eagle Island Point; fifty yards to the eastward of Whaleboat Ledge; nearly a quarter of a mile to the westward of Little Whaleboat Ledge; a quarter of a mile to the westward of the bare ledges off Little Whaleboat Island; and two hundred yards to the eastward of Sister Island Ledge.

II. ***Coming from the Southward or from Sea.***—Leave Half-Way Rock one-third of a mile to the eastward, and steer **N.** ⅛ **E.** through Broad Sound, following the directions given above.

DANGERS

IN APPROACHING AND ENTERING MARE POINT AND MAQUOIT BAYS.

II. ***By the passage between The Goslings and Little Whaleboat Island.***—Vessels using this passage from Middle Bay to Mare Point and Maquoit bays must beware of *Goose Ledge*, a pinnacle rock, with four feet at mean low water, which lies nearly in the middle of the passage, three-eighths of a mile **S.** ¾ **W.** from the westernmost Gosling, and three-quarters of a mile **NE.** ½ **E.** from the middle of Little Whaleboat Island, and is not buoyed. There is from seven to nine fathoms on all sides of it.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MARE POINT AND MAQUOIT BAYS.

III. ***By the passage between The Goslings and Little Whaleboat Island.***—On the course **NE.** ¼ **N.** up Middle Bay, when just past the northeastern point of Whaleboat Island and it bears **NW.** by **W.** ½ **W.**, and you are in twelve fathoms, steer **N.** ¾ **W.** for Flying Point. On this course you will carry not less than nine fathoms; and when Mare Point bears **NE.** steer for it, following the directions given above, and carrying nothing less than nine fathoms. These courses pass one hundred and fifty yards to the westward of Goose Ledge; but the channel is otherwise entirely unobstructed, and Goose Ledge may be passed on either hand by keeping the Little Whaleboat Island shore aboard or by passing close along the southern side of The Goslings.

DANGERS

IN APPROACHING AND ENTERING MARE POINT AND MAQUOIT BAYS.

III. ***Coming from the Westward, through Luckse's Sound.***—The first danger encountered by a vessel coming from the westward through Luckse's Sound, after passing Ram Island, is The Hussey, or *Hussey Rock*, as it is often called. This dangerous sunken rock is almost exactly in the middle of the channel, and has twelve feet upon it at low water. It bears **NE.** by **E.** ¾ **E.** from Portland Head Light-house, and **E.** ¾ **N.**, two miles and an eighth, from White Head. From the southwestern end of Crotch Island it bears **SW.** ¾ **W.**, distant two miles. This ledge is marked by a can-buoy of the second class, painted red and black in horizontal stripes, but is bold-to, and the buoy may be approached quite closely with eight fathoms water. (See page 448.) ***The Hussey.***

Crotch Island Ledge is the next danger met with continuing up the Sound. It makes off in a southwesterly direction from the southwestern point of Crotch Island for a quarter of a mile, and has spots of three feet upon it at mean low water, but is only dangerous to vessels beating to windward which may stand across the southwestern end of Crotch Island. It is not buoyed, but a buoy has been recommended to mark it. (See page 448.) ***Crotch Island Ledge.***

The **Stepping Stones**, which lie off the southeastern shores of Long Island, should not be approached too closely from the southward, as there is *a ledge with three feet at mean low water* about one hundred and fifty yards **S.** of them, which is not buoyed. (See page 448.)

Long bars make off from Sand Island both **NE.** and **SW.**, and are generally known as Sand Island Ledge. From the northeastern end the shoals run out nearly a quarter of a mile, and a black spar-buoy (No. 1) marks its northeastern point. This buoy is a guide to vessels coming from the eastward through the Inside Channel; but vessels bound east leave it to the southward. (See page 448.) ***Sand Island Ledge.***

Stave Island Ledge lies in the southern channel, (which leads along the southern shores of Hope, Sand, Little Bangs and Stockman's islands, and between these and Crotch and Stave islands,) and is only dangerous to vessels beating to windward. It lies a quarter of a mile **NE.** from the long rocky point on the northeastern end of Stave Island, is bare at low water, and is marked by a black spar-buoy (No. 3) placed in eighteen feet water off the end of the shoal. Vessels bound to the eastward leave this buoy to the southward. (See page 448.) ***Stave Island Ledge.***

The Goose Nest and Goose Nest Ledges lie in the northern channel, which leads along the southern and eastern shores of Great Chebeag, and on the northern side of Hope Island, Little Bangs Island and Stockman's Island. **The Goose Nest** is a bare rocky islet, about six hundred yards **N.** from the eastern end of Little Bangs Island and the same distance **NW.** from Stockman's Island. There is an excellent channel between these islands and The Goose Nest with from three to eight fathoms water. The Goose Nest Ledges are a line of rocks, bare at half-tide, extending from the island in a **N.** by **E.** direction three-eighths of a mile. They are not buoyed, but are easily avoided by keeping the shore of Great Chebeag aboard. Vessels standing across the northern end of The Goose Nest must give it a berth to the southward of not less than half a mile. (See page 449.) ***Goose Nest Ledges.***

Whaleboat Ledge, before described, (see page 448,) lies nearly midway between The Goose Nest and Whaleboat Island, and is three-quarters of a mile **NW.** by **N.** ½ **N.** from the southwestern point of Whaleboat Island and a mile **SW.** ½ **W.** from Little Whaleboat Island. It has nine feet at mean low water, and is marked by a red spar-buoy (No. 12) placed on its western edge in four fathoms water, as a guide to Freeport River. Vessels bound to the eastward leave it to the northward, while those bound up Maquoit or Mare Point Bay leave it to the eastward.

Whaleboat Ledge.

Little Whaleboat Ledge. Passing the buoy on Whaleboat Ledge, you come next to Little Whaleboat Ledge, also on the eastern side of the channel, which is not buoyed, and is awash at low spring tides. It is three-eighths of a mile **NE.** ½ **E.** from Whaleboat Ledge buoy and three-quarters of a mile **SW.** of Little Whaleboat Island, and should be given a good berth to the eastward.

From Little Whaleboat Island shoal ground extends to the westward and southwestward half a mile. In many places *the ledges are bare at half-tide and at low water, and are not buoyed;* and vessels, to avoid them, should not approach the island, in coming from the southwestward, nearer than three-quarters of a mile.

Green Island Ledge. Green Island Ledge, which lies between the Upper Green Islands and Chebeag Point, is an obstruction to the entrance to Freeport River, and is only dangerous to vessels beating to windward into or out of Maquoit or Mare Point bays. It has six feet at mean low water and four at low spring tides; and from Upper Green Islands it bears **SW.**, distant a quarter of a mile, and from Chebeag Point **NE.**, distant five-eighths of a mile. A red spar-buoy (No. 10) is placed in three fathoms on the southwestern side of the rock, as a guide to Freeport River; but by vessels bound up Maquoit Bay by way of Luckse's Sound, it is left well to the westward. By those using the channel between Littlejohn's Island and Great Chebeag, it is left to the southward.

French Island Reef. French Island Reef is a line of bare rocks, part of it out at high water, extending in a **NE.** by **E.** ½ **E.** direction from the northeastern point of French Island nearly three-eighths of a mile. These rocks are quite bold-to and are but little in the way; but due **N.** from the eastern end of the reef, a quarter of a mile distant, lie *Bibber's Rocks*, or *Bibber's Ledges*, a group of bare rocks surrounded by shoals, extending in a **NW.** and **SE.** direction for three hundred and fifty yards, and lying in the middle of the passage between Bibber's and French islands. These ledges are not buoyed, but a buoy will be recommended to mark them.

All the channels into the two bays unite in one at this point, and the dangers in the bays are described in full on page 454.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MARE POINT AND MAQUOIT BAYS.

IV. ***Coming from the Westward, through Luckse's Sound.***—1. ***By the Main or South Channel, outside of everything:*** When off Cape Elizabeth, in seventeen fathoms, with the eastern light-house bearing **NW.** ½ **N.**, one mile and an eighth distant, Portland Head Light-house **N.** ⅜ **W.**, and Half-Way Rock Light-house **NE.** by **E.** ¼ **E.**, steer **NE.** by **N.** ½ **N.**, carrying not less than nine fathoms water. Continue this course (which leads between Outer Green Island and The Hussey) until Half-Way Rock Light-house bears **SE.** by **E.** ⅛ **E.**,—seen between Inner Green Island and Jewell's Island. Now, with sixteen fathoms, steer **NE.** ½ **E.**, which will carry you clear of all dangers, and in not less than five fathoms, up to Stockman's Island. When past the eastern end of this island and Upper Green Islands bear **N.** ¼ **E.**, steer for them, carrying not less than five fathoms, until Chebeag Point bears **W.** by **N.** ¼ **N.**, and there is nine fathoms. Then steer **NE.** for Mare Point, carrying not less than six fathoms, and follow the directions given, on page 454, for the two bays.

2. ***Having come from Portland through the White Head Passage:*** Steer **E.** ¼ **S.**, with not less than nine fathoms, until the middle of Ram Island is in range with Portland Head Light-house on a bearing of **SW.** by **W.** ½ **W.**, when steer **NE.** ½ **E.**, carrying not less than six fathoms, and follow the directions given above.

3. ***By the North or Inside Channel:*** When clear of the White Head Passage, with Portland Head Light-house bearing **SW.** ⅜ **W.**, (just clear of the northern end of Ram Island,) and you are in twelve fathoms water, steer **NE.** ½ **E.** past Marsh Island and Obed's Rock, and until The Stepping Stones are in range on a bearing of **NW.** ¼ **W.** On this course the least water is nine fathoms. Then steer **NE.** by **N.** ¾ **N.** for Deer Point, carrying eight fathoms, until the extreme southwestern end of Hope Island bears **E.** by **S.** ½ **S.**, when there will be nine fathoms, soft bottom. Now steer **NE.** ¼ **E.**, up the middle of the passage between Great Chebeag and Hope Island. On this course you will

carry not less than eighteen feet, and when the southwestern end of Little Bangs Island bears **SE.** ½ **E.**, a quarter of a mile distant, and Upper Green Islands **NE.** by **N.** ¾ **N.**, in fifteen fathoms, steer the latter course, carrying not less than six fathoms, until the southwestern end of Stockman's Island is in range with Mark Island Monument on a bearing of **SE.** ½ **S.** Now, with eight fathoms, soft bottom, steer **NE.** for Mare Point, and follow the directions for either bay, given on page 454.

FREEPORT RIVER.

The entrance to Freeport River is between Moore's Point on the east and Stockbridge's Point on the west. Moore's Point is the southwestern end of Wolf's Neck, and Stockbridge's Point is the eastern extremity of a peninsula or neck of land making off from the mainland on the western side. Several islands lie off the mouth of the river, the principal of which are Bibber's Island, which guards the right or eastern side of the approach, and Great Moshier's Island, which guards the western side.

A vessel approaching Freeport River through Broad Sound steers a straight course (**N.** ½ **E.**) until past Little Whaleboat Island and approaching French Island, when the Upper Green Islands will be to the northward and Chebeag Point about abeam on the western hand. The entrance to the river is now open, and the course leads midway between French Island and Upper Green Islands. When between them there will be seen, bearing about **N NE.**, an island about forty feet high, and bare with the exception of a very few scattered spruce trees upon its surface. Two or three houses will be seen on its southern face near the shore. This is Bibber's Island, which lies on the eastern side of the approach to Freeport River, extends in an **E NE.** and **W SW.** direction, and is nearly three-quarters of a mile long. (See page 452.) Off its western end, and bearing **N.** ¾ **E.**, is a small, low and bare rocky islet, called **Busting's Island.** It is one-eighth of a mile **W SW.** from the western point of Bibber's Island, and there is a good but narrow channel with four fathoms water between them. The main channel, however, leads between Busting's Island and Great Moshier's Island.

Bibber's Island.

To the westward of Busting's Island, and bearing **N.** ¾ **W.**, will be seen a point of land about sixty feet high, its summit and southern face thinly wooded with fir and spruce trees and with two or three houses on it. This is Moore's Point, the southwestern end of **Wolf's Neck.** To the eastward of the point the land descends to a low plateau, and then rises to a hill eighty feet high with a somewhat steep precipitous face on the southern side. The summits are wooded, but cleared land appears at intervals along the extent of the neck.

Moore's Point.

A little to the eastward of Moore's Point the village of Strout's Point will appear as a settlement on a high hill, about one hundred feet above high-water mark; and a very steep and precipitous hill, wooded to its summit, will appear just to the eastward of the village, over Moore's Point. This hill is two hundred feet high.

Just clear of the western extremity of the village, and about a mile and a quarter distant, will appear a low islet without trees, and bearing **N.** by **W.** ¾ **W.** This is Crab Island, seven-eighths of a mile **S.** from Moore's Point, and on the western side of the channel, on the edge of the immense flats which occupy nearly all of the space between Yarmouth River entrance and Great Moshier's Island. There is a dwelling-house on this island, and out-buildings attached to it.

Crab Island.

Bearing about **NW.** by **N.** will appear an island of about the same size as Bibber's Island, guarding the entrance to Freeport River on the west,—its centre bearing **NW.** by **W.** The eastern end will show as a steep bluff eighty feet high, and from it the land slopes gently away towards the western end, where it is quite low, while a few spruce and fir trees are seen on the summit near the eastern end. The rest of the surface appears bare as viewed from the southward, although in reality the northern face of the island is partly wooded; and one house will be seen on the southwestern point. This island is called Great Moshier's Island; and on its northern side flats, dry at low water, extend off a quarter of a mile to a much smaller island lying at that distance, **NW.** from the western end of Great Moshier's. This is **Little Moshier's Island,** which lies **E.** by **N.** and **W.** by **S.**, and is nearly half a mile long and quite narrow. It is eighty feet high, steep, precipitous and bare of trees, and there are flats on all sides of it.

Great Moshier's Island.

The course now leads in the direction of Wolf's Neck, between Busting's Island and Great Moshier's, and past Crab Island, leaving it to the westward. To the eastward will be seen, on the northern side of Flying Point Neck, a large cove, formed by the shores of Wolf's Neck and Flying Point Neck, and the mainland between them. The shores of this cove are undulating, backed by wooded hills, with cleared and settled country, and groves of trees interspersed This cove is almost entirely bare at low water and is of no importance. Into its northwestern part empties a shallow creek, called **Little River,** bare at low water throughout its length, and much of it occupied by salt-meadow.

Approaching Moore's Point there will be seen, bearing about **NE.**, a low grassy islet in range with Stockbridge's Point, and called Bowman's Island. It lies one hundred and seventy-five yards **S SE.** from Stockbridge's Point, with which it is connected at low water; and the channel passes on its eastern side.

Bowman's Island.

Stockbridge's Point, which is left to the westward, is a low grassy point, forming the western point of entrance to the river and the eastern point of Staples' Island. The latter is a low bare peninsula, connected with the mainland by a very narrow neck or causeway. The centre of the island (or peninsula) is a hillock about twenty feet high, bare of trees. A few houses are seen on the southern face of the peninsula near its southwestern point, which is called **Staples' Point.**

Staples' Island.

Passing Stockbridge's Point, a large cove is seen on the western side of the river, between the northern shore of Staples' Island (which runs about **W.** by **S.**) and the mainland, (which runs about **NE.** and **SW.**) This cove is bare at low water, and is called Staples' Cove. At its northern point begins **Spar Cove**, a small narrow inlet, which runs to the westward along the southern shore of **Strout's Point.** The western shores of Staples' Cove are about eighty feet high, slope gradually, and are well wooded.

Staples' Cove.

Strout's Point Village lies on the western bank of Freeport River, about five-eighths of a mile above Stockbridge's Point. The general course of the river is about **NE.** from Stockbridge's Point to Bartol's Island,—a distance of a mile and three-quarters; but the channel is somewhat crooked.

The principal business in Freeport River is the importation of lumber and ship-timber and the building of vessels. The latter was formerly quite a prominent feature of the business at Strout's Point.

The shores of Wolf's Neck, which form the southeastern bank of Freeport River, are more steep and precipitous than the southeastern shores of the neck. Otherwise they have the same general appearance as when seen from the southward,—undulating, and diversified with cleared lands and groves of trees.

The northwestern bank of the river above Strout's Point shows low, cleared and cultivated lands, dotted at intervals with houses, and rising very gently as it extends back from the shore-line to the height of about forty feet, where it meets the base of the precipitous hill mentioned in the description of the approaches, (page 457.) This hill rises abruptly to a height of two hundred feet, and is well wooded with the usual growth of spruce and pine trees.

Bartol's Point. Bartol's Point is a broad, flat piece of ground, in no place over forty feet high, and in most places not over thirty. It will be seen, on passing Strout's Point Village, as a cleared point, dotted with houses on its eastern slopes, and with a large pier and wharves extending out to the edge of the channel from its eastern end. Above this point the most of the river is bare at low water.

Bartol's Island. Bartol's Island lies in the middle of the river, a mile and three-quarters above its mouth, and close to the northern shore or head of the stream, where meadow-grass joins it to the mainland. It is forty feet high, and bare of trees except on its northern side, where there are a few spruce and fir trees. It is three-eighths of a mile **NE.** from the pier or quay on Bartol's Point.

At Bartol's Island the river divides,—one branch going to the northeastward along the southeastern shores of Bartol's, and the other running nearly **N.** to a village on the western bank, half a mile above, called **Bartol's Point Village.** This is the head of navigation.

DANGERS

IN APPROACHING AND ENTERING FREEPORT RIVER.

I. ***Coming from the Eastward or Seaward, through Broad Sound.***—Vessels coming from the eastward and bound into Broad Sound will find a safe and convenient entrance by bringing Half-Way Rock Light-house to bear **SW.** $\frac{3}{4}$ **W.**, a little over three miles distant, and Mark Island Monument **NW.** $\frac{3}{4}$ **W.**, and steering **W.** by **N.** $\frac{1}{4}$ **N.** On this course the first danger met with is Mark Island Ledge, already described, (page 443,) which will be seen on the **W.** by **N.** $\frac{1}{4}$ **N.** course, bearing about **NW.** by **W.** It lies on the northern side of the entrance, about **SE.** by **S.** $\frac{3}{8}$ **S.** from Mark Island Monument, three-quarters of a mile distant, and **NE.** by **N.** from Half-Way Rock Light-house, two miles and three-quarters distant, and is awash at low spring tides. A black spar-buoy (No. 5) marks this rock, and is placed on the western point of the shoal as a guide for vessels using the Inside Channel through the bay. By vessels bound into Broad Sound, however, and using the channel between this ledge and Drunker's Ledges, it must, of course, be left to the northward.

Mark Island Ledge.

Drunker's Ledges will be seen, on approaching Mark Island Ledge, bearing about **SW.** by **W.** They lie **SW.** by **S.**, three-quarters of a mile from the latter, and two miles **NE.** by **N.** from Half-Way Rock Light-house. There are two distinct ledges, lying **NW.** $\frac{1}{2}$ **W.** and **SE.** $\frac{1}{2}$ **E.** from each other, about a quarter of a mile apart, with a deep channel between them. The southeastern ledge has four feet at mean low water and two at low spring tides, but the other is bare at half-ebb. Off the western end of the northwestern ledge is placed a spar-buoy, painted red and black in horizontal stripes. It is intended as a guide to vessels passing **E.** or **W.** between these ledges and Half-Way Rock. Those passing between it and Mark Island Ledge must give it a wide berth to the southward.

Drunker's Ledges.

Eagle Island Ledge, or *Eagle Island Rock*, as it is sometimes called, will be seen bearing **N.** on hauling to the northward to enter the Sound. It is dry at low water, and lies two hundred and fifty yards **SE.** $\frac{1}{2}$ **S.** from the southern end of Eagle Island. From the dry rock the shoal ground extends **SE.** three hundred yards and **E.** a quarter of a mile, with from six to eight feet at low spring tides. It has no buoy, but is not in the way of vessels bound in or out with a fair wind.

Eagle Island Ledge.

From the southern end of Eagle Island shoal ground extends in a southwesterly direction for an eighth of a mile, and is generally known as *Eagle Island Point.* It has no buoy upon it, but one has

been recommended. To avoid it, vessels must give the island a berth of not less than three hundred yards to the eastward.

After passing Eagle Island there are no obstructions in the channel until you are through the Sound and to the northward of Whaleboat Island. Then Whaleboat Ledge is met with, which will be recognized by its buoy, which is a spar painted red. The ledge is three-quarters of a mile **NW.** by **N.** ½ **N.** from the southwestern end of Whaleboat Island, and **SW.** ½ **W.**, one mile from Little Whaleboat Island. It is a pinnacle rock, with seven feet at low spring tides, and is marked by a red buoy (No. 12) placed in four fathoms on the western side of the ledge. ***Whaleboat Ledge.***

The course now leads to the northward, between French Island and the Upper Green Islands, and towards Moore's Point. On this course you will pass between two ledges, neither of which, however, is dangerous to such vessels as can pass up Freeport River, unless the tide be low. You will also pass to the westward of Busting's Island Ledge, which lies three hundred and fifty yards **S SE.** from Busting's Island, and has never less than sixteen feet at low spring tides. At mean low water it has eighteen feet, and is not buoyed. Nearly opposite to it, on the western side of the channel, lies *Moshier's Ledge*, with ten feet at mean low water and eight at low spring tides. It lies a quarter of a mile off the eastern shore of Great Moshier's Island, is quite bold-to on all sides, and is marked by a black spar-buoy (No. 1) placed in five fathoms off its eastern edge. ***Busting's Island Ledge.***

Only three hundred and fifty yards to the northward of Moshier's Ledge will be seen Crab Island Ledge, a small ledge, bare at half-tide, lying on the western side of the channel, **SE.** by **S.** ¾ **S.** from Crab Island, six hundred yards distant, and nearly half a mile **W.** ½ **S.** from Busting's Island. ***Crab Island Ledge.***

Flying Point Ledges are a number of ledges, some bare rocks and some bare at low water, with numerous sunken rocks with from two to four feet at low tides, extending off from Flying Point in a **W.** ¾ **S.** direction for three-quarters of a mile. There are various channels between and among them, and one very good passage between them with eleven feet water leading into the cove between Flying Point and Wolf's Neck. Strangers, however, should not attempt these passages. These ledges are not buoyed;—but being generally visible, and lying on the eastern side of the channel, are not much in the way. ***Flying Point Ledges.***

Four Feet Rock lies also on the eastern side of the passage, a quarter of a mile **NW.** ½ **N.** from the western end of the Flying Point Ledges, and has two feet at low spring tides. From Moore's Point it bears **SE.** ¾ **E.**, distant half a mile; and from Crab Island Ledge it bears **N.** by **E.** ¼ **E.**, distant nearly three-quarters of a mile. It is not buoyed, but is not dangerous except to vessels beating to windward. ***Four Feet Rock.***

Moore's Point Rock is a bare ledge, lying an eighth of a mile **S.** by **E.** from Moore's Point. It is always in sight, and is of no importance; but vessels standing across to the eastward should not, when on the southern side of Moore's Point Rock, go to the eastward of it bearing **N.** ¾ **W.**; otherwise they might be brought up on the flats.

Between Crab Island and Bowman's Island, on the western side of the passage, *a mass of flat ground* extends, covering almost the entire space between Freeport Entrance and Yarmouth Entrance. A very large part of these flats is bare at low water. Their eastern edge extends over the range of Bowman's and Crab islands and is tolerably bold-to. Vessels, to avoid being set on them, must not go to the westward of the southern point of entrance to Spar Cove bearing **NW.** by **N.** ½ **N.**, in range with the extremity of Stockbridge's Point.

Freeport Upper Ledge is very improperly named. It extends from **Pound of Tea Island** first **SE.** by **S.** and then **SW.** by **S.** ½ **S.**,—its whole length being a quarter of a mile. Four feet at mean low water is found on this ledge, and it is marked by a red spar-buoy (No. 2) placed in three fathoms water on the southern end of the shoal. This ledge is just opposite to Bowman's Island and should have been named from that island. ***Freeport Upper Ledge.***

Passing to the westward of buoy No. 2 there will be seen ahead, and nearly a quarter of a mile distant, a black spar-buoy. This is on Bowman's Island Ledge, which lies off Stockbridge's Point at a distance of one hundred and seventy-five yards. It is not connected with Bowman's Island, has four feet at mean low water, and is marked by a black spar-buoy (No. 3) placed in eighteen feet water on the eastern end of the ledge. After passing this buoy (which is left to the westward) the course leads past Pound of Tea, and between the small island **NE.** from it and *a bare rock* which lies three hundred yards **NE.** from Stockbridge's Point. ***Bowman's Island Ledge.***

Above Stockbridge's Point the most of the passage is filled by flats bare at low water, leaving only a narrow channel in the middle, through which eighteen feet at low water can be carried to Strout's Point Village and ten feet up to Bartol's Point. Vessels cannot go up to Bartol's Point Village except at high water or two-thirds flood.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING FREEPORT RIVER.

I. ***Coming from the Eastward, through Broad Sound.***—Bring Half-Way Rock Light-house to bear **SW.** $\frac{3}{4}$ **W.**, nearly three miles distant, and Mark Island Monument **NW.** $\frac{3}{4}$ **W.**, with seventeen fathoms, soft bottom, and steer **W.** by **N.** $\frac{1}{4}$ **N.**, passing between Mark Island Ledge and Drunker's Ledges and carrying not less than six fathoms water. Continue this course until the centre of Eagle Island bears **N.** $\frac{1}{2}$ **E.** and Half-Way Rock Light-house **S.**, with fifteen fathoms, dark green mud, when steer **N.** by **W.** $\frac{1}{4}$ **W.** for the eastern end of Stockman's Island. On this course you will carry nothing less than ten fathoms water. Continue it until the westernmost of the Upper Green Islands bears **N.**, and is seen just clear of the eastern point of Great Moshier's Island. Now, in ten fathoms, soft bottom, and you are abreast of the northeastern end of Ministerial Island, steer **N.** for Upper Green Islands until abreast of the red spar-buoy on Whaleboat Ledge. (On this course there is not less than six fathoms water.) Pass to the westward of this, and steer **N.** by **E.** for Busting's Island, carrying not less than nine fathoms; and when midway between French Island and the Upper Green Islands, in eight fathoms water, and the summit of Moore's Point bears **N.** $\frac{3}{4}$ **W.**, steer that course, carrying not less than four fathoms, and leaving Crab Island Ledge well to the westward. On this course, when past Crab Island, and Flying Point bears **E.** by **N.** $\frac{3}{4}$ **N.**, with four fathoms, soft bottom, steer **NW.** for Stockbridge's Point, carrying four fathoms water. Leave the red spar-buoy on Freeport Upper Ledge to the eastward, and steer **N.** by **W.** $\frac{3}{4}$ **W.** up the middle of the channel, passing to the eastward of the black spar-buoy on Bowman's Island Ledge, and continuing the course until past Pound of Tea, when steer **N NE.** for four hundred yards, until the end of the long pier in Strout's Point Village bears **N.** by **W.** $\frac{1}{8}$ **W.** Now steer **N.** $\frac{1}{4}$ **W.**, and anchor off the village. Not less than four fathoms may be taken on the above courses to the anchorage. *If bound farther up*, when the end of the long wharf before mentioned bears **W.** $\frac{1}{2}$ **N.**, about a hundred and twenty-five yards off, the course is **NE.** $\frac{3}{4}$ **E.** until the house on Bartol's Point bears **N.** by **E.** $\frac{1}{4}$ **E.**, when steer **NE.** $\frac{3}{4}$ **N.** for Bartol's Island; but no reliable sailing directions can be given above Strout's Point Village. Strangers bound farther up the river should take a pilot. Four fathoms at low water may be carried up to Strout's Point Village, ten feet at low water to Bartol's Point, and from ten to twelve feet at *high water* up to Bartol's Point Village.

The above courses pass three hundred and fifty yards to the westward of Whaleboat Ledge; one hundred and fifty yards to the eastward of Moshier's Ledge; seventy-five yards to the westward of Freeport Upper Ledge buoy; and the same distance to the eastward of Bowman's Island Ledge.

II. ***Coming from Sea, to pass to the Eastward of Half-Way Rock and enter Freeport River.***—Falling in with Half-Way Rock, bring it to bear **NW.** by **E.**, about one mile and three-quarters distant, and steer **N.** by **W.** $\frac{1}{4}$ **W.**, passing five-eighths of a mile to the eastward of the rock. Continue this course, which will lead you into Broad Sound, (clear of all dangers, with not less than thirteen fathoms,) until past Eagle Island and the westernmost of the Upper Green Islands bears **N.**, and there is ten fathoms, soft bottom, when steer for them and follow the directions given above.

III. ***Coming from Sea or from the Southward, to pass to the Westward of Half-Way Rock and enter Freeport River.***—Falling in to the southward of Half-Way Rock, bring the light to bear **N.** by **E.** $\frac{1}{4}$ **E.**, two miles off, when there will be fourteen fathoms, and it will be in range with Haskell's Island, (western end,) and Mark Island Monument will be open a little to the eastward of it. Now steer **N.** $\frac{1}{8}$ **E.**, passing one-third of a mile to the westward of Half-Way Rock Light-house. This course *made good*, will lead safely up to French Island in not less than nine fathoms water, and will leave the red buoy on Whaleboat Ledge one hundred and fifty yards to the westward. When between French Island and Upper Green Islands, with Moore's Point bearing **N.** $\frac{3}{4}$ **W.**, and you are in eight fathoms water, steer for that point and follow the directions given above.

Or, not wishing to pass between the two Whaleboat Ledges, on the **N.** $\frac{1}{8}$ **E.** course continue until the middle of Eagle Island bears **SE.** by **E.** $\frac{3}{4}$ **E.** and the southwestern point of Whaleboat Island **N.** by **E.** There will be from fifteen to eighteen fathoms at this point, and you should steer **N.** $\frac{1}{4}$ **W.** for the eastern point of Great Moshier's Island, carrying not less than nine fathoms, until abreast of Whaleboat Ledge buoy, which leave to the eastward, and steer **N.** by **E.** for Busting's Island. This course

carries you up to French Island with not less than nine fathoms water. When between French Island and the Upper Green Islands, in eight fathoms, steer **N. ¾ W.** for Moore's Point, and follow the directions for the river on page 460.

DANGERS

IN APPROACHING AND ENTERING FREEPORT RIVER.

II. ***Coming from the Westward, through Luckse's Sound.***—The approaches to Freeport River through Luckse's Sound are identical with those which lead into Maquoit and Mare Point bays, and which are described on pages 448–449. They are: First, *The Hussey*, with twelve feet, lying two miles **SW. ¾ W.** from Crotch Island, off the entrance to the Sound, and marked by a can-buoy of the second class, painted red and black in horizontal stripes. Secondly, *Crotch Island Ledge*, off the southwestern point of Crotch Island, with three feet and not buoyed. Thirdly, **The Stepping Stones**, off the southeastern shore of Long Island, which have *a ledge with three feet* one hundred and fifty yards **S.** of them. Fourthly, *Sand Island Ledge*, a long bar **NE.** from Sand Island, marked by a black spar-buoy. Fifthly, *Stave Island Ledge*, bare at low water, and marked by a black spar-buoy. Sixthly, **The Goose Nest** and **Goose Nest Ledges**, which are in the channel between Great Chebeag on the north and Little Bangs and Stockman's islands on the south. Seventhly, *Little Whaleboat Ledge*, three-quarters of a mile **SW.** from Little Whaleboat Island, and not buoyed. Eighthly, *Whaleboat Ledge*, with nine feet, one mile **SW. ½ W.** from Little Whaleboat Island, and marked by a red spar-buoy. Ninthly, *Green Island Ledge*, with six feet, between Upper Green Islands and Chebeag Point, marked by a red spar-buoy; and lastly, *Chebeag Point Ledge*, a shoal with three feet at mean low water, and awash at low tides an eighth of a mile **NE.** from the point. It is marked by a black spar-buoy (No. 11) placed in eighteen feet water off the northeastern end of the shoal.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING FREEPORT RIVER.

IV. ***Coming from the Westward, through Luckse's Sound, outside of everything.***—When off Cape Elizabeth, in seventeen fathoms, with the easternmost light-house bearing **NW. ¼ N.**, one mile and an eighth distant, Portland Head Light-house **N. ⅜ W.**, and Half-Way Rock Light-house **NE. by E. ¼ E.**, steer **NE. by N. ½ N.**, carrying not less than nine fathoms water. This course leads between Outer Green Island and The Hussey. Continue it until Half-Way Rock Light-house bears **SE. by E. ⅛ E.**, seen between Inner Green Island and the southwestern end of Jewell's Island. Now steer **NE. ½ E.**, which will lead clear of all dangers, and in not less than five fathoms, up to Stockman's Island. When past this island, and Busting's Island bears **N. ⅞ E.**, steer for it until between French Island and Upper Green Islands, carrying not less than five fathoms. Then, when Moore's Point bears **N. ¾ W.**, steer for it, and follow the directions given for the river. *Or*, if Busting's Island cannot be seen from off Stockman's Island, haul up **N. ⅞ E.** as soon as Half-Way Rock Light-house bears **S. ½ E.** Stockman's Island is bold-to, and you need not fear coming too close to it in turning.

The above courses pass about six hundred yards to the eastward of The Hussey; three hundred and fifty yards to the westward of Whaleboat Ledge; and three-eighths of a mile to the eastward of Green Island Ledge.

V. ***Coming from Portland, through the White Head Passage.***—Having come through the White Head Passage on an **E. ½ S.** course, bring Portland Head Light-house to bear **SW. ¾ W.**, (just clear to the westward of Ram Island,) with twelve fathoms, soft bottom, and steer **NE. ½ E.** past Peak's Island, across the entrance to Hussey's Sound, past Marsh Island and Obed's Rock, and carrying not less than ten fathoms water. When The Stepping Stones bear **NW. ¼ W.**, a quarter of a mile off, and are in range, steer **NE. by N. ¾ N.** for Deer Point, carrying eight fathoms. On this course, when the extreme southwestern point of Hope Island bears **E. by S. ½ S.** there will be nine fathoms, soft bottom, and you must steer **NE. ¾ E.** up the middle of the passage between Great Chebeag and Hope Island. On this course you will carry not less than eighteen feet. After passing Johnson's Cove, and you are in fifteen fathoms, with the southwestern end of Little Bangs Island bearing **SE. ½ E.**, steer **NE. by N. ¼ N.**, nearly for the Upper Green Islands, having them a little to the northward of the course. On this course you will carry not less than six fathoms, and when past these islands, with Moore's Point bearing **N. ¾ W.**, and you are in eight fathoms water, steer for that point, and follow the directions for the river on page 460.

Or, continue the course **NE. ¾ E.** past Little Bangs Island, and between The Goose Nest and Stockman's Island, until Half-Way Rock Light-house bears **S. ½ E.**, when steer **N.** by **E.** for Busting's Island, carrying not less than eight fathoms water. On this course, when you are between French Island and the Upper Green Islands, with eight fathoms, soft bottom, steer **N. ¾ W.** for Moore's Point, and proceed as before directed.

Or, when off the southwestern end of Little Bangs Island, in fifteen fathoms water, and it bears **SE. ½ E.**, steer **NE.** by **N. ⅜ N.** for Upper Green Islands, carrying not less than six fathoms water. On this course, when the end of Chebeag Point is nearly abeam on a bearing of **NW.** by **W.**, and you are in eight fathoms, sticky bottom, steer **N.** for Great Moshier's Island, passing to the westward of Green Island Ledge, and carrying not less than five fathoms water. On this course, when the highest part of French Island bears **E.** by **N. ¼ N.**, and you are in four fathoms, soft bottom, steer **NE. ½ N.** for Busting's Island, in range with Flying Point. On this course there will be not less than twenty-three feet water. When Moore's Point bears **N. ¾ W.** steer for it, and follow the previous directions, on page 460.

These courses, *if the first set of directions are followed,* pass a quarter of a mile to the southward of Obed's Rock; the same distance to the southward of The Stepping Stones; four hundred yards to the northward of Sand Island Point; a quarter of a mile to the northward of The Goose Nest; three hundred yards to the westward of Goose Nest Ledges; and one hundred and fifty yards to the eastward of Upper Green Islands. *If the second set of directions are followed,* you will pass three hundred and fifty yards to the westward of Whaleboat Ledge and three hundred yards to the eastward of Upper Green Islands. *If the third set are followed,* you will pass a quarter of a mile to the northward of The Goose Nest; three hundred and fifty yards to the westward of Goose Nest Ledges; and a quarter of a mile to the westward of Green Island Ledge.

INSIDE PASSAGE FROM PORTLAND HARBOR TO FREEPORT RIVER.

This is a very commonly used passage for coasters when wind or sea is unfavorable for an outside passage to Freeport or Yarmouth River. Beginning at Hog Island Ledge (upon which the large granite fort, called Fort Georges, stands) it runs in a northeasterly direction past Hog Island, Clapboard Island, Basket Island, Little and Great Chebeag islands, Cousin's Island, and between Great Chebeag and Littlejohn's islands, and joins the Luckse's Sound channel off Chebeag Point. The whole distance is nine miles from Breakwater Light-house to Chebeag Point,—the water being always smooth and the channel in most places wide and deep. Fourteen feet, between Mackey's Island and Fort Georges, is the shoalest water.

On leaving the Inner Harbor of Portland and steering to the northeastward, you will pass one mile **S.** of a round island, almost entirely under cultivation, but having a grove of spruce and pine on its summit (close to a group of houses) and a small group of oak, birch, maple, &c., near the southern shore. The southern side of the island presents a some-

Mackey's Island. what precipitous face about twenty feet above high-water mark; and behind this the land slopes more gently to the summit, which is forty feet high. This island is called **Mackey's Island,** and lies on the eastern side of the entrance to the Presumpscot River, and about three-eighths of a mile from shore. It is oval in shape,—the longest diameter (**E.** and **W.**) being half a mile and the shortest about five hundred yards. From its southern face a long bar extends seven hundred yards in a southerly direction to a bare rock, called **Half-Way Rock.**

Hog Island Ledge. To the southward you will pass a large granite fort built upon a very extensive ledge, covered at high water, called Hog Island Ledge, which lies three-eighths of a mile **W.** of Little Hog Island. The fort is **Fort Gorges,** and is a pentagonal casemated work, built of granite, but not yet completed.

Great Hog Island is the large, partly wooded and partly cleared island which lies on the southern side of this passage. When seen from the westward or northward it is easily recognized by one half of its southern and northern faces being cleared and under fine cultivation, with one or two small groves of ornamental trees on the slopes, two or three

Great Hog Island. orchards, and a group of houses on the hill. The cleared land is undulating, and in no place over eighty feet high; and the northern shores slope gently. The rest of the island is wooded with a great variety of trees,—oak, spruce, pine, fir, hemlock, birch, elm, &c.; and the southern face presents a steep bluff appearance to a height of sixty feet. Great Hog Island is nearly oval in shape, lies **NE.** and **SW.**, and is over a mile in length. Its northern shores are shoal and must receive a good berth from vessels using this channel. On its northeastern face it is indented by a deep and commodious cove, called **Diamond Cove,** famous as a resort for pleasure parties during the summer season.

From its extreme southwestern end Great Hog Island sends off a long and very narrow neck of sand and pebbles, connecting it with a smaller island two hundred and fifty yards to the southward of it, called Little Hog Island.

Little Hog Island. This island also lies **NE.** and **SW.**, is half a mile long, and its southern and western faces present a somewhat precipitous slope about sixty feet high, while the northern shores have a more gentle rise. The island is wooded with a variety of trees near the northern end, but the southern half is bare of trees and grassy.

There is a passage between Little Hog Island and Hog Island Ledge with four fathoms at low water; but strangers, however, should not attempt it.

Cow Island.

About one hundred and seventy-five yards to the northeastward of the eastern end of Great Hog Island lies Cow Island, small, forty feet high, nearly three hundred yards wide, and about three-eighths of a mile long. A few stunted firs skirt its northern face; and, seen from the westward, it is noticeable for having on its eastern end (which is otherwise bare) two tall spruce trees standing close together, and appearing like a brig under full sail. This mark distinguishes Cow Island from any other in the bay.

Three-quarters of a mile to the northeastward of Mackey's Island lie two low grassy islets, called **The Brothers, N NW.** and **S SE.** from each other, about one hundred and seventy-five yards apart. The northernmost one is nearly a quarter of a mile from the mainland, and they are surrounded by shoals.

Clapboard Island.

One mile and a quarter **N.** from Cow Island, and on the northern side of the channel, lies a long narrow island, called Clapboard Island. It was formerly called **Woody Clapboard Island,** to distinguish it from Sturdivant's Island, which was then known as Smooth Clapboard Island; but the trees have disappeared from its surface and there is now but a growth of bushes and shrubs upon it, with one rough hut near the centre of the island. The surface is undulating,—being forty feet high near the southern end, the same height in the middle, and twenty feet high at the northern end. It is nearly three-quarters of a mile long and extremely narrow,—being in no place more than two hundred and fifty yards wide. Bare rocky islets lie near the southwestern end,—the approach to which is very shoal, and is in many places bare at low water.

Basket Island.

When abreast of Clapboard Island, Basket Island will appear, bearing about **NE.**, and a mile and a half off. It is a small island of an oval shape, and about four hundred yards long. It is quite low, with a few trees near its southern end and a house near the centre of the island; and its shores are tolerably bold-to. **Sturdivant's Island,** formerly called **Smooth Clapboard Island,** lies a little over half a mile **NW.** from it, and Cousin's Island lies about a mile **NE.** from it. Deep channels exist among all of these islands.

Little Chebeag Island.

The channel now leads between Basket Island and Little Chebeag Island, which lies a mile and an eighth **S.** by **E.** from the former and six hundred yards **SW.** by **W.** from Great Chebeag, with which it is connected at low water. It is of moderate height, gently sloping, and bare of trees with the exception of a beautiful grove of spruce, pine and other trees on the summit; and grass-land and cultivated fields form the surface of the rest of the island. A large white house and out-buildings stand near the grove on the northern side. The house is used as a family hotel or summer boarding-house, and is the residence of the owner of the island. Little Chebeag was formerly much resorted to, but is now almost deserted. It is triangular in shape and lies nearly **E.** and **W.** On the northern shore of this island, nearly midway between the eastern and western ends, a cliff about thirty feet high will be noticed. The highest part of Little Chebeag is occupied by the grove above mentioned, and is forty-five feet above sea-level.

Great Chebeag Island.

Passing Little Chebeag, the course leads between Cousin's Island and Littlejohn's Island on the north and Great Chebeag on the south,—the latter being, with the exception of Great Island, the largest in Casco Bay. It is three miles long in a **NE.** and **SW.** direction and has an average width of a mile; and the highest land, which is near its centre, is one hundred and eighty feet above high-water mark. On the northern shore of this island (along which the course leads) the shores are steep, and present to the view wooded lands and cleared fields alternately, with groups of houses here and there. The western point, called **Indian Point,** is a long, low, bare point, from which a bare shingly bar extends to Little Chebeag Island at low water. The northeastern point is called **Chebeag Point,** is also low and cleared, with several houses upon the slopes to the westward of it and a small hillock on the extreme point. The northern shore of Great Chebeag is irregular in outline,—being much indented by coves. It is also quite shoal in places,—bare bars, such as **Seal Ledge** and **Chebeag Bar,** extending off some distance from the shore.

Cousin's Island.

Cousin's Island lies on the northern side of the channel, extends in a **NE.** and **SW.** direction, is a mile and three-quarters long, and has an average width of half a mile. It is, however, very irregular in shape, and its shores are much indented by coves. From its northeastern end a long low neck of land extends in an easterly direction for a quarter of a mile, when it divides into two points, one extending in a southeasterly and the other in a northeasterly direction. Both of these points are low and bare; and the northernmost one, which is called **Blaney's Point,** has a group of houses at its junction with the body of the island. The southernmost point is called **Cornfield Point,** and is composed of cleared and cultivated land, but has no houses upon it. Between the two points a nearly circular cove exists, which is, however, bare at low water.

Birch Point.

Cousin's Island is eighty feet high in its highest part, with an undulating surface varying from twenty to eighty feet above high-water mark. It is partly cleared and settled and partly wooded,—the surface showing occasional groves of trees and houses scattered at intervals along its northwestern face. The southwestern end is divided into two points, called Birch Point and Spruce Point,—the former of which is the northernmost, and is low and almost bare of trees. A few remain, however, of the grove of birch, which formerly gave the point its name; and a few houses stand on the slopes of the hill behind the point.

Doyle's Point.

Spruce Point, the southernmost point, is sixty feet high and somewhat steep, and covered with trees, mostly spruce,—whence its name. Half a mile **E.** of Spruce Point is Doyle's Point, the southern extremity of Cousin's Island, which is forty feet high and cleared, and has one or two houses upon it. In passing it bound through the Inside Passage the thickly wooded hill which forms the highest part of the island will be seen.

Three-eighths of a mile E. of Doyle's Point is Littlejohn's Island, lying about E NE. and W SW., a mile long and of irregular shape. Near the western end the land rises abruptly to a height of eighty feet and is tolerably thickly wooded,—most of the trees being spruce and fir. The eastern end of the island is lower, generally bare of trees and about twenty feet high; but on the northern shore the land slopes very gently. Between the eastern shore of Cousin's Island and the northern shore of Littlejohn's Island is a passage about three hundred yards wide, bare at low water, and of no importance.

Littlejohn's Island.

One mile E NE. from Littlejohn's Island is **Great Moshier's Island**, which lies on the western side of the approaches to Freeport River. Here the Inside Passage joins the other channels into the river, for a description of the shores of which see pages 457–458.

DANGERS

IN THE INSIDE PASSAGE FROM PORTLAND HARBOR TO FREEPORT RIVER.

Half-Way Rock is a bare rock, lying seven hundred yards S. from Mackey's Island, with which it is connected by a long bare bar; and flats extend to the westward of it half a mile, obstructing the entrance to Presumpscot River. From Half-Way Rock shoal water extends to the southward about three-quarters of a mile, with from seven to ten feet at low water.

Half-Way Rock.

The northwestern shore of Great Hog Island must not be approached nearer than six hundred and fifty yards until the middle of the island has been passed; for shoal ground, with eight feet water, is found at a distance of six hundred yards from high-water mark. On the extreme western end of this shoal ground, which is known as Hog Island Ledge, is placed a red spar-buoy (No. 2). The buoy is in three fathoms water, about twenty yards to the northwestward of the shoal part of the ledge; and vessels should, under no circumstances, attempt to pass to the eastward of it. The sailing-line passes close-to to the westward of this buoy.

Hog Island Ledge.

After passing buoy No. 2 the approaches to the shore are deeper until you are up to Brimstone Point Ledge, which lies NW. from Brimstone Point (eastern end of Hog Island) at a distance from shore of nearly four hundred yards. It has three and a half feet at mean low water, and is marked by a red spar-buoy (No. 4) placed in three fathoms water off its northern end; and there is no passage inside of it except for light-draught vessels.

Brimstone Point Ledge.

One mile NE. ½ E. from the buoy on Brimstone Point Ledge will be seen a black spar-buoy lying nearly midway between Clapboard Island and Cow Island. This is on Cow Island Ledge, which is bare at low water, and lies three-quarters of a mile S. by E. from the southwestern end of Clapboard Island and a little over half a mile N. by W. from the eastern end of Cow Island. The buoy (No. 1) is placed on its southeastern side in four fathoms water.

Cow Island Ledge.

After passing the buoy on Cow Island Ledge, which is left to the northward, the channel is clear until you are up to Lower Basket Island Ledge, lying a little over two miles NE. ¾ E. from Cow Island Ledge buoy and half a mile SE. ½ E. from Basket Island. This ledge is bare at half-tide, but has from four to seven fathoms water on all sides of it; and is marked by a black spar-buoy (No. 7) placed in four fathoms on the southeastern side of the shoal.

Lower Basket Island Ledge.

The channel here leads between Basket Island and Great Chebeag, leaving the black buoy on Lower Basket Island Ledge to the northward, and passing between it and a red spar-buoy off the northwestern shore of Great Chebeag. This buoy is off Seal Ledge, which extends in a northerly direction from the shore of Chebeag to a distance of three-eighths of a mile, and is bare at two hours before low water. The buoy, which is marked No. 6, is placed in two fathoms on its northwestern end, and bears E. ½ N. from the black spar-buoy on Lower Basket Island Ledge, distant three-quarters of a mile.

Seal Ledge.

Upper Basket Island Ledge is not in the way of vessels using this channel unless they are tacking to windward. It lies about midway between Spruce Point (on Cousin's Island) and Basket Island,—bearing SW. ¾ W. from the former, distant nearly half a mile, and N. ¾ E. from Lower Basket Island Ledge, five-eighths of a mile distant. It is bare at half-tide in many places,—thus forming several ledges about fifty or a hundred yards apart. A black spar-buoy (No. 9) is placed in three fathoms water on the northeastern side of the ledge, and is to be left to the northward by vessels passing either to the eastward or westward.

Upper Basket Island Ledge.

After passing the red buoy on Seal Ledge, the passage between Cousin's Island and Great Chebeag is entirely clear of obstructions until you are abreast of Doyle's Point, when there will be seen about half a mile ahead, and close under the shore of Littlejohn's Island, a red spar-buoy. This is on Chebeag Bar, a long pebbly bar making off in a northerly direction from the middle of the northern side of Great Chebeag to within an eighth of a mile of the southern shore of Littlejohn's Island, and dry at low water for a distance of three-eighths of a mile from the shore of the former. The buoy, which is marked No. 8, is placed in three fathoms water off the northern end of the bar, and is two miles NE. ½ E. from Lower Basket Island Ledge.

Chebeag Bar.

After passing the buoy on Chebeag Bar there will be seen to the eastward, close in with the northeastern end of Great Chebeag Island, a black spar-buoy; and still farther to the eastward, close to the Upper Green Islands, a red spar-buoy. The former is on Chebeag Point Ledge, which makes off from the point of that name in a northeasterly direction for three hundred yards and has but three feet at mean low water on its northern end. The buoy is marked No. 11, and is placed in three fathoms just to the eastward of the extremity of the shoal. *Chebeag Point Ledge.*

The red spar-buoy, which is marked No. 10, is on Green Island Ledge, a detached shoal spot with only six feet upon it at mean low water. It lies almost exactly in line between Chebeag Point and the Upper Green Islands,—being distant from the former about five-eighths of a mile and from the westernmost of the latter a little over four hundred yards. The buoy is in three fathoms off the southwestern side of the ledge. *Green Island Ledge.*

Neither Chebeag Point Ledge or Green Island Ledge is in the way of vessels unless they are standing to the southward on a wind; and when past them the channel is clear to French Island.

SAILING DIRECTIONS

FOR THE INSIDE PASSAGE FROM PORTLAND HARBOR TO FREEPORT RIVER.

Leaving Portland Harbor, bring Breakwater Light-house (on Staniford's Ledge) to bear **SW.** $\frac{1}{8}$ **W.**, and steer **NE.** $\frac{1}{8}$ **E.** past Hog Island Ledge, Little Hog Island and Great Hog Island, and carrying not less than fourteen feet water, until you are abreast of Brimstone Point Ledge and in four fathoms, soft bottom; when steer **NE.** by **E.** $\frac{1}{2}$ **E.** past Cow Island Ledge, with not less than four and a half fathoms, until the southwestern point of Clapboard Island bears **NW.** $\frac{3}{4}$ **W.** and the hotel on Little Chebeag **E.**, and you are in nine fathoms water. Now steer **NE.** $\frac{1}{2}$ **E.** towards Chebeag Bar buoy, passing to the southward of Lower Basket Island Ledge and to the westward and northward of Seal Ledge, and carrying not less than four fathoms. On coming up with Chebeag Bar buoy pass to the northward of it, in eight fathoms, and steer **NE.** by **E.** $\frac{3}{4}$ **E.**, carrying twenty-one feet water, until the highest part of French Island bears **E.** by **N.** $\frac{1}{4}$ **N.** and the westernmost of the Upper Green Islands **SE.** by **E.**, and you are in four and a half fathoms. Now steer **NE.** $\frac{1}{2}$ **N.** for Busting's Island, in range with Flying Point, carrying not less than twenty-three feet water; and when Moore's Point bears **N.** $\frac{3}{4}$ **W.**, and you are in five fathoms, steer for it, following the directions given for Freeport River on page 460.

YARMOUTH RIVER.

One mile and three-eighths to the westward of the entrance to Freeport River is Fogg's Point, the eastern point of the entrance common to Cousin's and Yarmouth rivers. The entrance is here three-eighths of a mile wide between Fogg's Point and Parker's Point, which forms the western side of the entrance.

The land between Staples' Point and Fogg's Point is low and bare, with wooded slopes one hundred feet high behind it, and one or two houses are seen; but the land is not under much cultivation. Fogg's Point is one hundred feet high, with scattered trees upon it, and one or two houses near the shore. Large flats extend from the point to the southward as far as Cousin's Island,—there being no passage into Yarmouth River between it and Blaney's Point. The channel into the river leads between **Sandy Point**, the northwestern point of Cousin's Island, and Drinkwater's Point on the mainland. **Fogg's Point.**

Parker's Point, on the western shore of the entrance, is twenty feet high, bare of trees, and has one or two houses on it.

Cousin's River is a narrow creek, about three-quarters of a mile long, and having an average width of an eighth of a mile. It is very shoal,—having only three feet at mean low water in a very narrow channel,—and is of no importance. The western point of entrance to this river, called **Brown's Point**, is narrow, forty feet high, and has a few trees upon it. **Cousin's River.**

Yarmouth River passes to the westward, between Brown's and Parker's points, and at its mouth is a quarter of a mile wide. Its course is about **W.** for three-quarters of a mile, and then turns abruptly to the northwestward for about a mile farther to the village of **Yarmouth Falls**, situated on its western bank. The channel is extremely narrow, and has but four feet at mean low water or about thirteen feet at high water; and the bed of the river at low water is bare with the exception of a very narrow slue forming the channel. The shores are of moderate height, varying from twenty to sixty feet, mostly cleared and under cultivation. Yarmouth Falls is a small village, in which there is some little business done in ship-building.

The approach to Yarmouth River from Portland, or from the westward, leads between Clapboard Island and Prince's Point on the mainland. This point is low, broad, cleared and settled except on the summit, which is forty feet high and occupied by groves of trees. Behind it to the northward the land gradually rises to one hundred feet above high-water mark, and is almost entirely cleared and under fine cultivation,—some of the finest **Prince's Point.**

farming lands on the coast being in this vicinity. Prince's Point is seven-eighths of a mile to the westward of Clapboard Island and a mile and a half to the northwestward of Mackey's Island.

Bartlett's Point. On the northern side of Prince's Point a small cove, bare at low water, makes in about a quarter of a mile. Its northern point of entrance is a cleared point with one or two houses on it, called Bartlett's Point; and on the northern side of Bartlett's is a larger cove, of irregular shape, called **Mussel Cove.**

From Mussel Cove the shore takes a general course **NE.** ¼ **E.** for two miles to the entrance to Broad Cove. The land rises gradually to a height of over one hundred feet, the slopes cleared and cultivated, and the summits of the ridges thickly settled. Three-quarters of a mile **NE.** from Bartlett's Point is a small creek or cove, called **York's Landing**; and nearly three-eighths of a mile above York's Landing, and one mile and an eighth above Bartlett's Point, is **Foster's Landing.** All of these waters afford good anchorage.

Sturdivant's Island. Sturdivant's Island, or **Smooth Clapboard Island,** as it is sometimes called, is low, cleared and cultivated, with a few houses on it. It lies to the southward of the mouth of Broad Cove; three-quarters of a mile **E.** by **N.** from Foster's Landing; seven-eighths of a mile **NE.** by **N.** from Clapboard Island; five-eighths of a mile **NW.** from Basket Island; and about half a mile from the mainland.

Broad Cove. Broad Cove is a large and deep indentation in the northwestern shores of Casco Bay, two miles and a half to the northeastward of Prince's Point and the same distance to the westward of Parker's Point. It is a mile and a half long, and a mile wide at its mouth; and nine feet at mean low water may be safely carried up the cove a mile from its mouth. The shores are high, steep and cleared in most places, with occasional wooded hills, and houses dotting the slopes here and there.

Prince's Point. The eastern point of the entrance to Broad Cove is called Prince's Point, or, to distinguish it from the point of the same name three miles and a half to the southwestward, **Upper Prince's Point.** It is low, nearly bare of trees and thinly settled; and is two miles and a quarter to the westward of Parker's Point, and one mile **NW.** from Birch Point, on the southwestern end of Cousin's Island.

Drinkwater's Point. One mile and a quarter to the westward of Prince's Point is a low broad point, partly cleared and partly wooded, called Drinkwater's Point, where there is a landing place and several wharves; and Sandy Point, the northwestern point of Cousin's Island, is not quite three-eighths of a mile **SE.** from it. A small cove, dry at low water, called **White's Cove,** makes in on the northern side of Drinkwater's Point, and its shores are wooded and somewhat steep. Parker's Point, the western point of entrance to Yarmouth River, is one mile to the eastward of this point.

Lane's Island is a low wooded island, lying to the southward of Fogg's Point at a distance of a quarter of a mile. It lies **E.** and **W.**, is half a mile long, and at low water is connected with the mainland and also with Cousin's Island by dry flats.

DANGERS

IN APPROACHING AND ENTERING YARMOUTH RIVER.

I. ***By the channel leading along the Eastern shores of Clapboard and Sturdivant's Islands.***—There is no passage into this river from the eastward or southward except at high water, and then only for light-draught vessels. The dangers in the approaches from Portland Entrance are, first, Half-Way Rock (see page 464) and the shoals which make off from it to the southward. This is a bare rock, lying seven hundred yards **S.** from Mackey's Island, with which it is connected by bare flats. Shoal water extends from it to the southward about three-quarters of a mile; but vessels of six feet draught may go within two hundred and fifty yards of the rock.

Half-Way Rock.

The western shore of Great Hog Island must not be approached nearer than six hundred and fifty yards until you have passed the middle of the island, as eight feet at mean low water is found at a distance of six hundred yards from high-water mark. This shoal ground is called Hog Island Ledge, and is marked by a red spar-buoy (No. 2) placed in three fathoms water about twenty yards to the westward of the western edge of the shoal. Vessels should not attempt to pass to the eastward of this buoy as it is very shoal all the way to the island.

Hog Island Ledge.

Brimstone Point Ledge. After passing Hog Island Ledge the approaches to the shore are deeper until up with Brimstone Point Ledge, (see page 464,) which lies **NW.** from Brimstone Point, (eastern end of Great Hog Island,) four hundred yards from shore. It has three and a half feet at mean low water, and is marked by a red spar-buoy (No. 4) placed in two fathoms off its northern end; and there is no passage inside of it except for light-draught vessels.

After passing the buoy on Brimstone Point Ledge a black spar-buoy (No. 1) will be seen bearing about **NE.** ½ **E.** This is on Cow Island Ledge, which lies one mile to the northeastward of Brimstone Point, three-quarters of a mile **S.** by **E.** from the southwestern end of Clapboard Island, and a little over half a mile **N.** by **W.** from the eastern end of Cow Island. The buoy is placed on the southeastern side of the ledge; and vessels bound to Yarmouth Entrance pass to the northward of it, between the ledge and Clapboard Island. (See page 464.)

Cow Island Ledge.

Clapboard Island Upper Ledge, or *Upper Clapboard Island Ledge*, as it is sometimes called, is the next danger met with, and lies **SE.** from the western end of Sturdivant's Island, half a mile off; **NE. ¾ E.** from the northeastern end of Clapboard Island, nearly three-quarters of a mile distant; and a third of a mile **W.** from the southern end of Basket Island. Seven feet at mean low water is found on this ledge, which is small and surrounded by deep water; and a red spar-buoy (No. 6) is placed in sixteen feet off the western side of the ledge. It may be left on either hand, but if left to the westward must receive a berth of three hundred and fifty yards.

Clapboard Island Upper Ledge.

A group of bare ledges lies **SW.** from the western end of Sturdivant's Island at a distance of nearly half a mile, and are known as Sturdivant's Island Ledges. Shoal water extends from the bare rocks to the island, so that vessels must not attempt to pass between it and the ledges except at high water; and strangers must never attempt the passage. These ledges are not buoyed as they always show themselves, and vessels passing to the eastward of Sturdivant's Island leave them to the westward; while those passing between the island and the mainland leave them to the southward and eastward.

Sturdivant's Island Ledges.

After passing Sturdivant's Island there are no more dangers in this channel until you are past Birch Point and approach the passage between Sandy Point and Drinkwater's Point. Nearly three-quarters of a mile to the southwestward of Sandy Point, and a mile to the northeastward of Birch Point, will be seen a ledge, bare at low water, called Sandy Point Ledge. The bare rock is nearly half a mile from shore; and a long shoal, bare at low spring tides, extends in a northeasterly direction from it for three-quarters of a mile.

Sandy Point Ledge.

Above Sandy Point the channels are so narrow and crooked and so full of flats and shoals as to render it impossible to give any intelligible information in regard to them.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING YARMOUTH RIVER.

I. ***By the Channel leading along the Eastern shores of Clapboard and Sturdivant's Islands.***—Coming from Portland, bring Breakwater Light-house to bear **SW. ⅛ W.**, half a mile off, and steer **NE. ⅛ E.** past Fort Gorges and Great Hog Island, past Brimstone Point Ledge and Cow Island Ledge, (carrying nothing less than fourteen feet water,) and continue this course until abreast of the northeastern end of Clapboard Island and you are in seven fathoms water; when steer **N.** by **E.**, with not less than seven fathoms, until up with Clapboard Island Upper Ledge buoy, which leave to the eastward, two hundred and fifty yards off, and steer **NE. ¾ N.** past Sturdivant's Island, leaving Birch Point well to the eastward, and carrying not less than sixteen feet water. When past Sandy Point Ledge, and the wharf on Drinkwater's Point bears **N.** by **E.**, a quarter of a mile off, and Sandy Point **E.** by **N. ¼ N.**, with eighteen feet water, steer **NE.** by **E.**, about for the middle of Lane's Island. This course leads you safely through, between Drinkwater's and Sandy points, with not less than fifteen feet water. Beyond this no sailing directions can be given, as the channel is extremely narrow and crooked and obstructed by many shoals and flats, through which no stranger can possibly trace his way. A pilot should always be obtained either at Cousin's Island or Drinkwater's Point.

II. ***Coming from Seaward.***—Bring Portland Head Light-house to bear **NW.** by **N. ⅜ N.** and steer for it, which course will lead between West Cod Ledge Rock and Corwin Rock with not less than twelve fathoms water. When Cape Elizabeth Light-houses are in range, two miles off, with ten fathoms, hard bottom, steer **N.** by **E.**, carrying not less than nine and a half fathoms, until you are up with Peak's Island, and Portland Head Light-house bears **SW.** by **W. ¾ W.**, in range with the southern end of Ram Island. Now, in fifteen fathoms, soft bottom, steer **N.** by **W.** for Cow Island, which course leads through Hussey's Sound with not less than eleven fathoms. When up with Pumpkin Nob (off the northern end of Peak's Island) and about a quarter of a mile to the eastward of it, steer **N.** by **E.**, carrying not less than seven fathoms, and leaving Cow Island and Clapboard Island to the westward. Continue the course until you are abreast of the red spar-buoy on Upper Clapboard Island Ledge, and in seven and a half fathoms, soft bottom, with the southern end of Basket Island bearing **E.**; when steer **NE. ¾ N.** and follow the directions previously given.

The above courses pass three-quarters of a mile to the westward of The Hussey; a quarter of a mile to the eastward of Pumpkin Nob; a quarter of a mile to the eastward of Cow Island Ledge; two hundred and fifty yards to the westward of Clapboard Island Upper Ledge; and one hundred and fifty yards to the westward of Sandy Point Ledge.

DANGERS

IN APPROACHING AND ENTERING YARMOUTH RIVER.

II. ***By the Inshore Passage between Clapboard Island and the mainland.***—Vessels using this passage haul up to the northward as soon as they are past the middle of Great Hog Island. When past The Brothers, look out for Clapboard Island Lower Ledge, or *Lower Clapboard Island Ledge*, as it is sometimes called, which has three feet at mean low water, lies **W.** from the southern end of Clapboard Island, a quarter of a mile distant, and has no buoy. At low water the kelp shows the position of the ledge, but at high water there is no sign of it; and a buoy has accordingly been recommended to mark it.

Clapboard Island Lower Ledge.

Passing Clapboard Island Lower Ledge, you come next to Jones' Ledge, which lies two hundred and fifty yards off the western shore of Clapboard Island, a quarter of a mile above its southern end, and a little over a quarter of a mile above the Lower Ledge. It has four feet at mean low water on its eastern end; but there is a rock a little over one hundred and fifty yards **E.** from it, which is awash at mean low water and is out at low spring tides. There is no buoy, and the kelp shows only in one small spot about five or six yards square.

Jones' Ledge.

Four hundred yards **NW.** from the northeastern end of Clapboard Island are *a couple of bare rocks*, which have no name. There is no passage inside of them, as a line of shoals extends to the island; but their western side is bold-to and may be approached closely.

On the western side of the channel, when past Prince's Point, there is *a ledge with five feet at mean low water*, which lies **E.** from the entrance to Mussel Cove at a distance from Bartlett's Point of half a mile; and from Prince's Point its shoalest part bears **NE.** ¼ **E.**, a little over half a mile. The ledge is quite a long one,—extending in a **SW.** direction a quarter of a mile,—is not buoyed and has no name.

Nearly one mile **NE.** ¼ **E.** from Prince's Point a black spar-buoy (No. 3) will be seen, which is on York Ledge, lying **SE.** from York's Landing, six hundred yards from shore. It is bare at extreme low tides, and the buoy is placed in sixteen feet close to the bare rock and off its southeastern end. From the bare part of the ledge shoal water extends **NW.** for one hundred and fifty yards, where there is six feet at mean low water.

York Ledge.

It is not safe for strangers to go inside of York Ledge; and after passing it the course leads between Sturdivant's Island and the mainland, leaving Sturdivant's Island Ledges (see page 467) to the eastward and a black spar-buoy to the westward. This buoy is on Underwood's Ledge, which lies **E.** ½ **S.** from Foster's landing, about a third of a mile from shore, and has four feet at mean low water. The buoy (No. 5) is placed on its eastern end in three fathoms, and bears from York Ledge buoy about **NE.** ½ **E.**, distant a little over half a mile, and from the southwestern end of Sturdivant's Island **W.** by **S.** ¾ **S.**, half a mile distant. The ledge is not large, and there is from three to four fathoms water between it and the main shore; but strangers should always leave the buoy to the westward.

Underwood's Ledge.

Prince's Point Shoals.

Prince's Point Shoals extend from Prince's Point in a southwesterly direction for half a mile. Spots dry at low water lie at that distance from the point, and at low spring tides the whole shoal is bare. Near the southern end of these shoals is a round bare rock, called **Pumpkin Nob.**

After passing Pumpkin Nob the course leads towards Sandy Point, and there are no obstructions until you are up with Sandy Point Ledge, already described on page 467.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING YARMOUTH RIVER.

III. ***By the Inshore Passage between Clapboard Island and the mainland.***—Continue the course **NE.** ⅛ **E.** from Breakwater Light-house until abreast of the middle of Great Hog Island and you are in three and a quarter fathoms water, when Half-Way Rock will bear **W.** by **N.**, nearly three-quarters of a mile off, and the eastern end of Mackey's Island **NW.** ¾ **N.**, nearly a mile distant. Now steer **N NE.**, carrying not less than twenty-one feet water, and leaving Clapboard Island to the eastward nearly half a mile distant. Continue this course until you are up with the black buoy on York Ledge, which leave to the westward, and steer **NE.** past Underwood's Ledge, and along the northwestern shore of Sturdivant's Island, with not less than four fathoms water. When abreast of the eastern end of this island, and about a quarter of a mile from it, in twenty-three feet water, soft bottom, steer **NE.** by **E.** ½ **E.** for Sandy Point. On this course there is not less than fifteen feet. When Birch Point bears **S.** by **W.** and you are about a quarter of a mile from Sandy Point Ledge, in fifteen feet, soft bottom, steer **NE.** ¾ **N.** for a little over eight hundred yards, until the wharf on Drinkwater's Point bears **N.** by **E.** and Sandy Point **E.** by **N.** ¼ **N.**, when there will be fifteen feet,

soft bottom. Thence steer **NE.** by **E.**, which course leads through between Sandy Point and Drinkwater's Point, in fifteen feet at low water. The water is nearly always smooth in this passage, and it is the one mostly used by fishermen and coasters bound to Yarmouth Falls. *Sailing Directions---Yarmouth River.*

The above courses pass two hundred and fifty yards to the westward of Clapboard Island Lower Ledge; one hundred and fifty yards to the eastward of York Ledge; two hundred yards to the westward of Sturdivant's Island Ledges; one hundred and fifty yards to the eastward of Underwood's Ledge; and one hundred and fifty yards to the westward of Sandy Point Ledge.

If bound into Broad Cove.—When past Underwood's Ledge, (on the **NE.** course,) bring the southwestern point of Sturdivant's Island to bear **E.** by **S.** ¼ **S.**, just clear to the northward of Basket Island, and about three hundred and fifty yards off, when there will be seven fathoms water. Now steer **N NE.** into the cove, carrying not less than seventeen feet, and anchor according to draught, in from twelve to seventeen feet water.

INSIDE PASSAGE THROUGH CASCO BAY, FROM CAPE SMALL POINT TO PORTLAND HARBOR.

This channel is very frequently used by coasters and fishermen bound either to the eastward or westward through the bay. The following directions are given for the convenience of those desiring to use it.

Bring Cape Small Point to bear **N NE.**, one mile distant, (showing just clear of Glover's Rock,) when there will be sixteen fathoms, hard bottom. Now steer **W NW.** for Mark Island Monument, carrying not less than four and a half fathoms, until you are abreast of Turnip Island Ledge, (marked by a red buoy, No. 2,) bringing the buoy to bear **NE.** by **N.**, distant half a mile, with eight fathoms water. Then steer **NW.** ¾ **W.** for the southwestern point of Haskell's Island until Mark Island Monument bears **W.** ¼ **N.** and Turnip Island Ledge buoy **E.** ¼ **S.**,—being in sixteen fathoms water. Then steer **W NW.** directly for Haddock Rock until within a quarter of a mile of it, and you are in seven fathoms water, with Haskell's Island bearing **N NE.**, about two hundred yards distant. Then steer **NW.**, which will bring the Monument astern; and this course continue, with not less than six fathoms water, until the centre of Eagle Island bears **SW.** by **S.** ½ **S.** and the southwestern end of Upper Flag Island **NE.** ¼ **N.**, when there will be fourteen fathoms, black mud. Then steer **NW.** ¾ **W.** towards Little Bangs Island, with not less than six fathoms, and when past Stave Island Ledge buoy (which leave to the westward close-to) and you are in six fathoms water, steer **W.** ½ **S.** past Little Bangs Island and the buoy on Sand Island Ledge, carrying not less than seven fathoms. When past this buoy, and Sand Island bears **SW.** by **S.** ⅛ **S.**, steer **W SW.** past Deer Point until it bears **NE.** by **N.** ¼ **N.**, three hundred yards distant, and the western end of Hope Island **SE.** by **S.** ⅛ **S.**, and you are in nine fathoms, soft bottom. On this course the least water is five fathoms. Then steer **W.** by **N.** ⅛ **N.**, and gradually haul to the northward, keeping about three hundred and fifty yards from Deer Point to avoid *Deer Point Rock*, which has nine feet water and lies two hundred and fifty yards **SW.** from the point. On this course there will be not less than five and a half fathoms. When Crow Island bears **W.** ¼ **N.**, about two hundred yards off, and there is seven fathoms water, steer **NW.** by **N.** ⅛ **N.** until Crow Island bears **S.**, carrying not less than eight fathoms water. Then steer **W SW.** until the hotel on Little Chebeag bears **N.** ½ **E.**, with six fathoms, soft bottom, when steer **W.** ½ **S.** past Cow Island until you are abreast of Brimstone Point Ledge. On this course the least water is four fathoms. Leave the red buoy on this ledge to the southward about three hundred yards off, and steer **SW.** ⅛ **W.** for Breakwater Light-house, carrying not less than fifteen feet water. When within half a mile of it, haul up for the anchorage.

PORTLAND HARBOR.

The city of **Portland**, which is the principal maritime port of the State of Maine, lies in Latitude 43° 39′ N. and Longitude 70° 15′ W. The harbor is one of the best on the coast, and is naturally divided into an Inner and Outer Harbor. The **Outer Harbor** is contained between a line joining Mackey's and Great Hog islands on the northeast, Peak's Island on the east, House Island on the south, and the shores of Cape Elizabeth from Spring Point to Breakwater Light-house on the west.

Hog Island Roads, properly so-called, are contained between Little Hog Island, Peak's and House islands.

The **Inner Harbor** is formed by the waters of Fore River, which is an arm of the bay, running in a **SW. by W.** direction between the peninsula upon which the city is built and the northern shores of Cape Elizabeth. A bridge crosses the river a mile and a quarter to the westward of the breakwater and forms the western boundary of the harbor. This bridge is called **Portland Bridge**, and connects the city with Cape Elizabeth. The Inner Harbor is a mile and a quarter long in a **NE.** and **SW.** direction, and at average high tide is about eleven hundred yards wide; but at mean low water this is reduced to a width of about one thousand yards.

Fore River.

Munjoy Hill. The northeastern end of the city of Portland is built upon a high hill, called Munjoy Hill, the summit of which is one hundred and forty feet above sea-level. On this hill stands **Munjoy Observatory**, a very prominent red tower, from which marine intelligence, such as the arrival of vessels, &c., is signaled.

A breakwater, solidly built of granite, extends off from the extreme northern point of Cape Elizabeth in a **NE.** direction six hundred and fifty yards; and upon its extremity is built a low iron tower, painted white and showing a red light, as a guide to vessels to enable them to avoid **Staniford's Ledge**,—on part of which the breakwater is built. This light-house is called Breakwater Light-house, and shows a flashing red light, of the fifth order of Fresnel, from a height of twenty-three feet above the sea, visible eight miles. The light flashes once every fifteen seconds, and is visible from a bearing of **SW. ¾ W.** around by **W.** to **SE. by S. ½ S.** Its geographical position is

Breakwater Light-house.

Latitude ..... **43° 39′ 18″ N.**
Longitude ..... **70° 14′ 8″ W.**

Vessels bound to Portland from the eastward, and intending to pass through Casco Bay, leave Seguin Island a mile and a half and Cape Small Point about two miles to the northward, and steer **W. ¼ N.** for Portland Head Light-house. When off Cape Small Point, a grey tower will be seen (if the weather be clear) bearing **W. ¼ N.**, and distant about nine miles. This is Half-Way Rock Light-house, and will appear, until within two or three miles of it, as if standing in the water. It is built upon Half-Way Rock, which is a bare rocky islet about sixteen feet high, situated in Casco Bay, seven miles and three-quarters **E. ¼ N.** from Portland Head Light-house and nine miles **E NE.** from Cape Elizabeth Light-houses. The light-house is a granite tower sixty-six feet in height, showing a fixed white light (varied by red flashes once every minute) from a height of eighty feet above sea-level and visible fifteen miles. The light is of the third order of Fresnel, and bears from

Half-Way Rock and Light-house.

	Miles.
Seguin Light-house, W.	**12¼**
Cape Small Point, W. ⅝ S.	**9⅛**
Mark Island Monument, S. by W. ¼ W.	**3⅛**
Portland Head Light-house, E. ⅛ N.	**7⅝**
Cape Elizabeth Light-houses, E NE.	**9**

The geographical position of this light-tower is

Latitude ..... **43° 39′ 21″ N.**
Longitude ..... **70° 2′ 13″ W.**

Approaching Half-Way Rock, if the weather be clear, a white tower will appear directly ahead and about eight miles off, showing against the land; and a little to the southward of this tower, on a high point of land jutting out into the sea, two towers, close together, will appear on a bearing of **W. by S.** The tower directly ahead is Portland Head Light-house, and is built upon **Portland Head**, a prominent headland of Cape Elizabeth, three miles and a half above the pitch of the cape. It is a white tower sixty-nine feet high, and shows a fixed white light from an elevation of one hundred and one feet above sea-level, visible fifteen miles. This light is of the second order of Fresnel, and its geographical position is

Portland Head Light-house.

Latitude ..... **43° 37′ 22″ N.**
Longitude ..... **70° 12′ 29″ W.**

The keeper's dwelling, which is a white stone building, is connected with the light-house by a wooden porch.

When close to the light-house, a pyramidal structure, whitewashed, and about thirty feet high, will appear standing at the base of the light-tower. This is the bell-tower, and contains the fog-bell and machinery for striking it. There is also another fog-signal, a second-class Daboll air-trumpet, giving blasts of eight seconds at intervals of forty seconds. It is placed in a building adjacent to, and to the northwestward of, the bell-tower.

Fog-signals.

The two towers seen to the southward of Portland Head, on the high land, are Cape Elizabeth Light-houses, standing three hundred yards apart on a line **NE. by E.** and **SW. by W.**, on the pitch of the cape. The eastern tower (called **East Light**) is of iron, painted brown, fifty-three feet high, and shows a revolving white light, of the second order of Fresnel, from a height of one hundred and forty-three feet above the sea, visible eighteen miles. This light flashes at intervals of one minute. The western tower (called **West Light**) is also of iron, painted brown, and is precisely the same in appearance and height as the eastern tower. It shows, however, a fixed white light, visible eighteen miles; and is connected with a small wooden dwelling by a covered way, painted white. Two small dwellings, whitewashed, will also be seen a little to the westward of the eastern tower. The geographical position of the East Light is

Cape Elizabeth Light-houses.

A whistling-buoy, (painted red, with H. R. in black letters,) giving blasts at short intervals, has been moored in nineteen fathoms off **Half-Way Rock** in Casco Bay. The position of this buoy, as given by the Light-House Board, is as follows:

Half-Way Rock Light-house bears	**NW. $\frac{1}{4}$ N.**
Mark Island Monument bears	**N. $\frac{5}{8}$ E.**
Junk of Pork bears	**W. by N. $\frac{1}{8}$ N.**



Entrance to Portland Harbor, Portland Head Light House bearing N.W.¼W. distant 3 Miles

Latitude ..... 43° 33′ 57″ N.
Longitude ..... 70° 12′ 1″ W.,

and that of the West Light is

Latitude ..... 43° 33′ 50″ N.
Longitude ..... 70° 12′ 10″ W.

In foggy weather a second-class siren is sounded, giving two blasts of five seconds each, with an interval of eight seconds between them, and then a pause of forty-two seconds, every minute. In case of accident to the siren a ten-inch steam whistle will be sounded. The fog-signal houses, which are whitewashed, are situated about three hundred yards to the southward of the eastern tower. **Fog-signal.**

The course (**W. ¼ N.**) steered for Portland Head leads half a mile to the southward of Half-Way Rock, and passes New Meadows Entrance, Quohog Bay and Harpswell; and, when **S.** of Half-Way Rock, Mark Island Monument will be seen, bearing **N.** by **E. ¼ E.**, four miles distant, showing up against Haskell's Island.

After passing Half-Way Rock there will be seen, bearing about **W NW.**, a small, grassy island, bare of trees, and nearly four miles off. This is Outer Green Island, about twenty feet in height, with a somewhat steep shore, and about four hundred yards long **NE.** and **SW.**,—bearing **E.** by **N.** from Portland Head Light-house, four miles distant. To the northeastward of it will be seen, a little over a mile distant, another small low islet, called **Inner Green Island**, (see page 437); and **Jewell's Island**, showing as a partly bare and partly wooded island of considerable height, will appear still farther to the northeastward. **Outer Green Island.**

On approaching Portland Head, after passing to the westward of Outer Green Island, a large high island, with its eastern slopes covered with fir and spruce, will appear bearing about **W NW.** This is Bangs' Island, and its northeastern extremity, which is called **White Head**, will bear about **NW. ¾ W.**, and will show as a bold bare bluff, with precipitous rocky face, about eighty feet high. The shores of the island to the southward of White Head rise gradually to a height of over one hundred feet, and are wooded to within a quarter of a mile of the southwestern end. This island is irregular in shape, lies **NE.** and **SW.**, and is about three-quarters of a mile long and half a mile wide. A large brick building, used as a summer hotel by the owners, is built near the summit on the southwestern face of the island. The western part of Bangs' Island is lower than the eastern slopes,—the land varying from twenty to sixty feet in height, with a very gentle rise from the shore. This part of the island is occupied by a farm-house and out-buildings and there is some cultivation; but the eastern part is rocky and barren. **Bangs' Island.**

In range with Bangs' Island, on a bearing of **W.** by **N. ¼ N.**, will be seen a low bare islet, (with long ledges extending from it in a southerly direction,) called Ram Island. It lies **N.** and **S.**, six hundred yards off the shore of Bangs' Island, and is about a quarter of a mile long; and from Portland Head Light-house it bears **NE.** by **E. ¾ E.**, a little over a mile distant. There is a good passage between Ram Island and Bangs' Island with from three to five fathoms water. The bare ledge to the southward of this islet is called **Ram Island Ledge**, (see page 473;) and a triangular beacon, supported on a high tripod, has been erected on its southwestern end. **Ram Island.**

Just to the northward of White Head a narrow opening will appear, through which portions of the city may be seen. The northern shore of this passage is formed by the southern shore of a large wooded island of moderate height, on which a few houses are seen. This island is called Peak's Island and the passage is White Head Passage, which runs between Peak's and Bangs' islands into the Outer Harbor of Portland. **White Head Passage.**

Peak's Island lies nearly **N.** and **S.**, and is about a mile and a half long, with an average width of nearly a mile. The larger part of the island is wooded, but the western shores are cleared, settled and under cultivation, so that seen from the harbor it appears like a thickly settled shore. It is a great resort during the summer season, and there is a large hotel near the summit, on the western side. Off its northern end, at a distance of one hundred yards, is a round islet with a few trees upon it, called **Pumpkin Nob.** **Peak's Island.**

Hussey's Sound runs between Peak's Island and Long Island and has a deep unobstructed channel, but in easterly and southerly winds there is a very ugly choppy sea, so that vessels bound to the eastward usually avoid it by passing along the western shore of Long Island through the Inside Passage.

The shores of Cape Elizabeth are seen, when approaching Portland Head, to be composed of hills varying in height, presenting an undulating surface, partly wooded and partly cleared and under cultivation. Many villas and handsome cottages appear on the slopes, and the shores are sometimes steep and sometimes rise with a very gradual inclination. The shore-line is much cut up by coves, the principal of which, beginning at the pitch of the cape, are Broad Cove, Zeb's Cove, Pond Cove, Ship Cove, and Simonton's Cove, sometimes called Gurry Cove. **Broad Cove** is about three-quarters of a mile above **Dyer's Point**, which is the northern point of the pitch of Cape Elizabeth; **Zeb's Cove** is a mile and a quarter above Broad Cove; **Pond Cove** is a mile below Portland Head; **Ship Cove** is a small indentation making in on the northern side of the head; and **Simonton's or Gurry Cove** is a mile and a half above the head and just below **Spring Point**, on which is built Fort Preble. **Cape Elizabeth.**

When within half a mile of Portland Head Light-house the course leads to the northward between Bangs' Island and the shores of Cape Elizabeth, which are here thickly settled and cultivated. The large granite fort, surmounted by heavy sod traverses, which is seen on Spring Point on the port bow, is **Fort Preble**; and the barracks and officers' quarters are very conspicuous objects.

Opposite to Fort Preble, and a little on the starboard bow, is a square fortification called **Fort Scammel**. This is on House Island, which lies three-eighths of a mile to the northward of Bangs' Island, is very irregular in shape, lies

House Island. NE. and SW., and is about half a mile long. The island is composed of two oval hillocks connected by a very narrow causeway,—the northeasternmost being about thirty feet high, with a large house on the summit; while the southwestern end of the island, upon which is built the fort, is about fifty feet in height. The fort landing-places are on the western shore.

White Head Passage joins the main channel between Bangs' and House islands.

Hog Island Ledge. To the westward of House Island, and about three-quarters of a mile to the northward of Fort Scammel, a large granite casemated fort will be seen. This is **Fort Gorges**, a pentagonal work with bastions, built upon Hog Island Ledge, (see page 462,) which is an extensive dry ledge, lying three-eighths of a mile W. from Little Hog Island. There is a deep but very narrow channel, with twenty feet at low water, between this island and the ledge.

Although visible at intervals over the intervening land, the city of **Portland** does not show clear of the Cape Elizabeth shores until you are abreast of Bangs' Island, when the houses on Munjoy Hill begin to appear; and, when you approach Spring Point, the town gradually opens to the eastward of Fort Preble. When abreast of the point nearly the whole town is visible, as well as the settlement on the northern shore of Cape Elizabeth. Half a mile NW. from Spring Point the breakwater on Staniford's Ledge will be seen, with the low white light-tower on its eastern end. There is a wharf alongside the light-house, on which are usually collected a number of large iron can-buoys.

Cushing's Point. About midway between the fort and the breakwater a point of land, rather higher than that adjacent, juts out from the shore-line, with a perpendicular face on its northern side, and thickly dotted with houses. This point is called Cushing's Point, and the houses upon it form part of the settlement on Cape Elizabeth, called **Ferry Village**.

The eastern and southern faces of **Munjoy Hill** are steep and in some places precipitous; and the summit, crowned with houses, is visible a long way up the bay. The red tower of the observatory is a prominent object for a great distance.

There are ways for hauling vessels out at Cape Elizabeth, and a steam dry-dock on the flats alongside of Portland Bridge.

Fore River is crossed by three bridges above Portland Bridge—the **Portland, Saco and Portsmouth Railroad Bridge**, a quarter of a mile above it; **Vaughan's Bridge**, three-quarters of a mile above the railroad bridge; and another railroad bridge nearly a quarter of a mile above Vaughan's Bridge. All these have draws in them.

DANGERS

IN APPROACHING AND ENTERING PORTLAND HARBOR.

I. ***Coming from the Eastward, through Casco Bay.***—The first danger met with by vessels coming from the eastward, after passing Cape Small Point, is The Flat Ground, or *Temple's Ledge*, as it is sometimes called, which is not buoyed. Nothing less than five fathoms at low

The Flat Ground. water is found upon this shoal, and it is not in the way unless you are beating to windward and are to the northward of your true course; and neither is it dangerous except in very heavy gales, when it breaks. The shoalest spot on the ledge bears W. by S. ¼ S., distant two miles from Cape Small Point, and S. ¾ E., two miles and a quarter from Woody Mark Island.

Passing Temple's Ledge, Lumbo's Ledge is next met with, an extensive piece of shoal ground lying four miles and three-quarters E. ½ N. from Half-Way Rock Light-house and

Lumbo's Ledge. two miles and three-quarters SW. from Woody Mark Island. There is only one very shoal spot upon it, and this is marked by a spar-buoy painted red and black in horizontal stripes, and placed in five fathoms one hundred yards S. of the ledge. There is only eleven feet at low water upon this shoal, which is a pinnacle rock on the ledge.

Southwest Ledges, which are very dangerous and are dry at low water, extend off from Half-Way Rock in a W SW. direction three hundred and seventy-five yards, and are always

Southwest Ledges. marked by heavy breakers. Vessels should not, under any circumstances, approach the western side of Half-Way Rock nearer than half a mile; and the courses give it a much wider berth.

Vessels bound to Portland and obliged by circumstances to pass inside of Half-Way Rock must beware of Webster Rock, which lies three hundred and fifty yards N. from Half-Way

Webster Rock. Rock Light-house, and has eight feet at extreme low water. At mean low tides there is eleven feet upon it; and there is no passage between it and Half-Way Rock. A black spar-buoy (No. 7) is placed in five fathoms on the northern side of the ledge; and as it is a very long spar it can be seen from a considerable distance.

After passing Half-Way Rock, on the W. ¼ N. course for Portland Head, there are no dangers until you are near Outer Green Island. The course leads nearly a mile S. of this island; but if obliged to stand to the northward, there is a little bare rock, surrounded by shoal water,

Junk of Pork. which lies two hundred and fifty yards SE. from Outer Green Island. This rock is called Junk of Pork, (see page 437,) and is very bold-to on its southern face; but there is no passage between it and Green Island except for small boats. It is only dangerous at night, and then can be avoided by not standing to the northward of Half-Way Rock Light-house bearing E. ¼ S.

The next danger met with, after passing Outer Green Island, is on the southern side of the passage, and is called Witch Rock. It is two miles and three-quarters **W SW.** from Outer Green Island; and from Portland Head Light-house it bears **E.** by **S.**, one mile and a half distant. It has four fathoms at mean low water and twenty-two feet at low spring tides, and is marked by an iron nun-buoy of the second class, painted red, marked "W. R." in white letters, and placed in eight fathoms on the southern side of the ledge. This buoy bears **S SE.** from the middle of Ram Island, distant nearly a mile; and the course for Portland Head Light-house leaves it nearly a quarter of a mile to the southward. ***Witch Rock.***

Ram Island Ledge, an extensive ledge, bare at low water, makes off from the southern end of Ram Island in a **S.** by **W.** direction a quarter of a mile. Its southern end bears **E.** by **N.** ¼ **N.** from Portland Head Light-house, distant one mile, and **W.** from Half-Way Rock Light-house, distant six miles and three-quarters; and the channel between it and Witch Rock is over half a mile wide. A wooden tripod, fifty feet high, covered in for about one-third of the way down, and painted red, has been erected on the southern end of this ledge. ***Ram Island Ledge.***

When within a quarter of a mile of Portland Head the course turns to the northward, and the channel leads between Bangs' Island and the eastern shore of Cape Elizabeth. The first obstruction or danger met with is off the southern end of Bangs' Island, and is called Catfish Rock. It lies about **W.** by **N.** from the extremity of the southwestern point of Bangs' Island, one hundred and fifty yards from shore, and has sixteen feet at low water. It is really only an extension of the point; but, as the current sets strongly on to this end of the island, a red spar-buoy (No. 2) has been placed in four fathoms water to the southward of the rock. Vessels must be careful not to get inside of this buoy. ***Catfish Rock.***

The eastern shore of Cape Elizabeth, from Portland Head to Spring Point, may be approached to within three hundred and fifty yards with not less than three and a half fathoms; and at night vessels beating in may stand pretty close to the shore, after passing the head, until they are up with the southern end of Bangs' Island. After passing this they should, unless of light draught, go about as soon as Portland Head Light-house bears **S.** by **E.** ¼ **E.**, until within a quarter of a mile of Spring Point and they are off the entrance to Simonton's (or Gurry's) Cove.

After passing Catfish Rock another red spar-buoy will be seen to the northward and eastward, off the northwestern end of Bangs' Island. This is on Bangs' Island Ledge, which makes off from that island for about three hundred yards, and has only four feet at mean low water upon it two hundred yards from the shore of the island. The buoy, which is marked No. 4, is placed in four fathoms about twenty yards to the westward of the shoal part of the ledge. ***Bangs' Island Ledge.***

The southern end of House Island should receive a berth of two hundred and fifty yards, as *the shoal water* makes off from it in a southwesterly direction for over a hundred yards and is not buoyed.

Directly opposite to the northwestern end of Bangs' Island, and in the entrance to Simonton's (or Gurry's) Cove, will be seen a black spar-buoy marked No. 5. This is off the northeastern side of Mill Rock, a detached ledge, with two feet at low water, lying about one hundred and fifty yards **N.** ¼ **E.** from the southern point of entrance to the cove. The buoy is in three fathoms water, and vessels should not go to the westward of a line between it and the black buoy on Spring Point Ledge. ***Mill Rock.***

Spring Point must always receive a good berth, for there is a bad ledge, called Spring Point Ledge, making off from it **NE.** by **N.**, three hundred and fifty yards. Much of it is bare at three-quarters ebb, and it is bare at low spring tides two hundred yards from shore. A first-class iron can-buoy, painted black, and having the letters "S. P. L." marked upon it in white, is placed in five fathoms water on the point of the ledge, and there is no passage inside of it. This buoy bears **SE.** by **E.** ⅛ **E.** from Breakwater Light-house and **N.** ¾ **W.** from Portland Head Light-house; and strangers bound in at night should keep these bearings in mind to avoid the ledges. ***Spring Point Ledge.***

Spring Point Ledge buoy is the turning point in the channel, which now leads to the northwestward; and Breakwater Light-house must be kept well on the port bow, and passed at a distance of not less than three hundred and fifty yards; for, between Spring Point and Cushing's Point, the shoals make off several hundred yards with from six to eleven feet at low water. The water shoals gradually between these two points, however, and the lead will give due warning,—the bottom being mostly sand and mud.

Staniford's Ledge makes off from the northern point of Cape Elizabeth to a distance of a quarter of a mile with less than six feet at mean low water, and two hundred and fifty yards outside of Breakwater Light-house with less than twelve feet. The breakwater is built upon this ledge, and runs in a **NE.** by **E.** direction, six hundred and fifty yards, to the light-house. Two hundred yards **N.** by **E.** from the light-house is placed an iron nun-buoy of the second class, painted black, and marked with the letters "S. L." in white. There is no passage between this buoy and the breakwater. ***Staniford's Ledge.***

Vessels must not approach Fort Gorges from the southward or westward nearer than three hundred yards, to avoid the shoal water surrounding the dry part of **Hog Island Ledge.**

Vessels bound into Hog Island Roads, if of heavy draught, should give the northwestern shore of House Island a berth of eight hundred yards, to avoid *a piece of shoal ground, with twelve and thirteen feet at extreme low tides,* which extends off six hundred and fifty yards from the island. There is a narrow passage, with from three to five fathoms water, close along the northern shore of House Island; but strangers must not attempt it.

The Middle Ground. The Middle Ground lies to the northward of Breakwater Light-house and on the northern side of the channel commonly used. It is an extensive flat, with nine feet water, muddy bottom, extending in an **E.** and **W.** direction about six hundred yards. On its northern side, close to the line of piers, runs a narrow channel with three fathoms at low water, and on its southern side passes the usual channel for vessels bound in and out of Portland Harbor. This channel passes between Staniford's Ledge buoy on the south and The Middle Ground buoys on the north. Two spar-buoys mark this shoal,—one, a red spar (No. 4), being placed in seventeen feet at low water on the southeastern point of the shoal. It is three-eighths of a mile (or seven hundred yards) **N.** $\frac{3}{4}$ **E.** from Breakwater Light-house, and a quarter of a mile **N.** $\frac{1}{4}$ **E.** from Staniford's Ledge buoy, and must be left to the northward. Passing this buoy, there will be seen another red spar a little over a quarter of a mile to the westward. This is off the western end of The Middle Ground, is marked No. 6, and is placed in sixteen feet at mean low water. From it Breakwater Light-house bears **SE.** $\frac{3}{4}$ **S.**, a little over seven hundred yards distant, and it must be left to the northward.

Upper Harbor Ledge. After passing the western buoy on The Middle Ground, a black spar-buoy will be seen on the southern side of the channel, bearing about **SW.** $\frac{1}{2}$ **S.**, and a little over half a mile distant. This buoy (which is marked No. 3) is placed on the northern point of a group of rocks with four feet at low water, which lies on the edge of the flats making off from the Cape Elizabeth shore, and is known as Upper Harbor Ledge. It is half a mile from the draw in Portland Bridge. Many vessels anchor to the eastward of these rocks; but those bound up Fore River must be careful to give this black buoy a good berth to the southward.

Light-draught vessels frequently anchor on The Middle Ground.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PORTLAND HARBOR.

I. ***Coming from the Eastward, through Casco Bay.***—When you are a mile and three-quarters **S.** of Cape Small Point, in sixteen fathoms water, (if the weather be clear,) Portland Head Light-house should be seen bearing **W.** $\frac{1}{4}$ **N.**, nearly seventeen miles distant. This light-house is, however, only visible from this point in very clear weather. In ordinary weather vessels should pass about two miles **S.** of the cape, in fifteen fathoms water, and steer **W.** $\frac{1}{4}$ **N.**, with Half-Way Rock Light-house a little on the starboard bow. On this course the least water is eleven fathoms. As soon as Portland Head Light-house is seen steer for it, passing three-quarters of a mile **S.** of The Flat Ground or Temple's Ledge; one mile **S.** of Lumbo's Ledge; nearly half a mile **S.** of Half-Way Rock; three-quarters of a mile **S.** of Outer Green Island; a quarter of a mile **N.** of Witch Rock; and the same distance **S.** of Ram Island Ledge. On this course there will be nothing less than ten fathoms water. When within a quarter of a mile of Portland Head Light-house and the easternmost of the Cape Elizabeth Light-houses bears **S.** by **W.**, there will be seven and a half fathoms, hard bottom, and you must steer **N.** by **W.** until past Spring Point (carrying not less than six fathoms) and Breakwater Light-house bears **NW.** by **W.** $\frac{3}{4}$ **W.** Now steer **NW.** $\frac{1}{2}$ **W.**, passing three hundred yards to the eastward of Spring Point Ledge buoy, carrying not less than sixteen feet, and continue this course until you are past Breakwater Light-house and the buoy on Staniford's Ledge, when the red spar-buoy on the western end of The Middle Ground will be seen directly ahead. Continue the course for this buoy until within two hundred yards of it, and Breakwater Light-house bears **S.** by **E.** $\frac{3}{4}$ **E.**, when there will be seventeen feet, soft bottom. Then steer **SW.** by **W.** $\frac{1}{4}$ **W.** between the line of wharves and the settlement on Cape Elizabeth, and anchor on the southern side of the channel according to draught, in from two to four fathoms, soft bottom.

If of light draught and wishing to anchor on The Middle Ground, steer between the two red buoys on the ends of the shoal and anchor when past their range. On this course there is not less than nine feet.

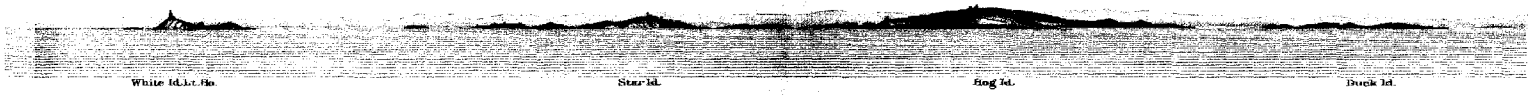
A vessel of heavy draught may, if desirable, use the narrow channel which crosses the bar close under Munjoy, and which has eighteen feet at mean low water. To enter it, when on the **N.** by



Entrance to Harpswell and Broad Sounds, (Casco Bay) Mark Island Monument bearing NW. ¼ W, distant 3½ Miles.



Cape Elizabeth from the Southward, East Lt. bearing N.NW, distant 6¼ Miles.



View of Isles of Shoals, White Island Light bearing NW. by W, distant 5 Miles.

W. course you are past Spring Point, bring Breakwater Light-house to bear NW. by W. ¾ W., and steer NW. by N. ¼ N. exactly for the extreme eastern point of Munjoy. Continue this course, carrying not less than twenty-two feet water, until you are within four hundred yards of the shore, when Breakwater Light-house will bear S. by W. ½ W., and the westernmost of the two large piers, which are built near the eastern end of Munjoy, (commonly called the **Great Eastern Piers,**) W. ¼ N., and there will be three and three-quarter fathoms. Now steer for this pier and go as close to it as possible. Then keep close along the line from wharf to wharf, and when up with the easternmost of the large piers of the Grand Trunk Railroad Company steer about S. by W. ½ W., which course will lead you clear of the western end of The Middle Ground and into the main channel with not less than eighteen feet at mean low water. This channel is used by heavy-draught steamers, and it is kept open by a dredging-boat under the direction of the United States Engineers.

Sailing Directions--Portland Harbor.

DANGERS

IN APPROACHING AND ENTERING PORTLAND HARBOR.

II. ***Coming from the Eastward, from Sea.***—Vessels using this passage go to the northward of the Cod Ledges; and the first danger encountered is East Cod Ledge, composed of two distinct shoals, lying nearly NE. and SW. from each other, and over half a mile apart. The most northerly ledge is called *Round Shoal*, and has four and three-quarter fathoms at mean low water. It bears from Half-Way Rock Light-house S. by W. ½ W., three miles and a quarter, and from Portland Head Light-house E SE., seven miles and a quarter. Thirteen hundred yards (or five-eighths of a mile) SW. from Round Shoal is *East Cod Ledge Rock*, which is at the southwestern extremity of East Cod Ledge, has seven and a half fathoms, and bears SE. by E. ½ E. from Portland Head Light-house, distant seven miles. It is not dangerous except in very heavy gales. Between these two rocks the shoalest water on the ledge is nine fathoms.

East Cod Ledge.

Bulwark Shoal, which is a dangerous ledge with fourteen feet at low water, forms the northeastern extremity of West Cod Ledge,—a line or group of ledges extending in a NE. and SW. direction across the approaches to Portland Harbor. The southwestern end of this ledge, *Alden's Rock*, is SE. by E. from the easternmost of the Cape Elizabeth Light-houses; and thence the ledge extends five miles to Bulwark Shoal. There are several good channels crossing it among the several shoals composing it. Bulwark Shoal bears SW. ¾ S. from Half-Way Rock Light-house, three miles and a half; from Portland Head Light-house SE. by E. ¾ E., six miles; and from Round Shoal W. by N., one mile and a quarter distant. It is marked by an iron nun-buoy of the first class, painted red and black in horizontal stripes, and placed in ten fathoms water on the southeastern side of the ledge.

West Cod Ledge.

After passing Bulwark Shoal vessels using this passage meet with no dangers until they are up with Witch Rock, (see page 473,) which lies on the northern side of the channel, has twenty-two feet at low spring tides, and is two miles and three-quarters W SW. from Outer Green Island and one mile and a half E. by S. from Portland Head Light-house. This rock is marked by an iron nun-buoy of the second class, painted red, with the letters "W. R." in white, and placed in eight fathoms on the southern side of the ledge; and from it the middle of Ram Island bears N NW., distant nearly a mile.

Witch Rock.

Passing Witch Rock, a nun-buoy, painted red and black in horizontal stripes, will be seen broad on the port bow. This is on Jordan's Reef, sometimes called *Bell Rock*, which has twenty-two feet at mean low water, and lies SE. ⅛ E. from Portland Head Light-house, distant one mile, and S. by W. from Ram Island, also one mile distant. The buoy is placed fifty yards SE. from the reef, in seven fathoms water; and the ledge extends in a NE. and SW. direction two hundred and fifty yards to the northward of it.

Jordan's Reef.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PORTLAND HARBOR.

II. ***Coming from the Eastward, from Sea.***—Bring Portland Head Light-house to bear W. by N. ¾ N. and steer for it, carrying not less than eight fathoms, and passing half a mile to the northward of Round Shoal, two-thirds of a mile to the northward of Bulwark Shoal, a quarter of a mile to the southward of Witch Rock, and four hundred yards to the northward of Jordan's Reef. Continue this course until you are within a quarter of a mile of Portland Head Light-house, and have seven and a half fathoms, hard bottom; when steer N. by W. up the harbor, and follow the directions given on the preceding page.

DANGERS

IN APPROACHING AND ENTERING PORTLAND HARBOR.

III. ***Coming from the Southeastward, and passing between Bache's Rock and West Cod Ledge Rock.***—This channel crosses West Cod Ledge about midway between its southwestern and northeastern ends; and on the northern side of the passage is Bache's Rock, which has four fathoms at low water. It bears **SE.** by **E.** from Portland Head Light-house five miles and a half; **SW.** from Half-Way Rock Light-house, four miles and a half; and **E.** ½ **N.** from the easternmost of the Cape Elizabeth Light-houses, five miles distant. It is not buoyed, and breaks only in heavy gales.

Bache's Rock.

West Cod Ledge Rock. Two miles **SW.** by **W.** from Bache's Rock, and on the southern side of the channel, is West Cod Ledge Rock, with four and a half fathoms at low water. It bears **SE.** ¾ **S.** from Portland Head Light-house four miles and a half, and **E.** ½ **S.** from Cape Elizabeth East Light-house, a little over three miles distant, and is not buoyed. Vessels of light draught pay no attention to these rocks except when the weather is heavy.

After crossing West Cod Ledge there are no dangers until you are about a mile and a half from Portland Head Light-house, when the course leads about midway between Pine Tree Ledge and Willard's Rock. The latter is on the southern side of the channel and has five and a quarter fathoms at low water. It bears **NE.** by **N.** from Cape Elizabeth East Light-house two miles and a quarter, and **SE.** by **S.** ¾ **S.** from Portland Head Light-house one mile and three-quarters, and is not buoyed.

Willard's Rock.

Pine Tree Ledge. Pine Tree Ledge lies on the northern side of the channel, has three and a half fathoms at mean low water, and is not buoyed. It lies almost exactly midway between Witch Rock and Willard's Rock, (on a line running **NE.** by **N.** ½ **N.** and **SW.** by **S.** ½ **S.**,) and bears from Portland Head Light-house **SE.** ¼ **E.**, nearly one mile and a half, and from Cape Elizabeth East Light-house **NE.** by **N.**, nearly three miles distant. It breaks only in heavy southerly gales.

The course now leads to the northward, and passes to the westward of Jordan's Reef, already described on page 475. This ledge is one mile **SE.** ⅞ **E.** from Portland Head Light-house and the same distance **S.** by **W.** from Ram Island, has twenty-two feet at mean low water, and is marked by a nun-buoy painted red and black in horizontal stripes. This buoy is placed fifty yards **SE.** of the reef, in seven fathoms water.

Jordan's Reef.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PORTLAND HARBOR.

III. ***Coming from the Southeastward, and passing between Bache's Rock and West Cod Ledge Rock.***—Bring Cape Elizabeth Light-houses to bear **W.** by **N.** ½ **N.** and Portland Head Light-house **NW.** ¼ **W.**, when there will be about twenty-five fathoms, rocky bottom. Then steer **NW.** ¼ **W.**, leaving Bache's Rock one mile to the northward and West Cod Ledge Rock one mile to the southward; and on this course the least water will be nine fathoms. Continue the course until Cape Elizabeth Light-houses are in range on a bearing of **SW.** by **W.** and you have a depth of eleven fathoms. Then steer **NW.** by **W.** ½ **W.** for nearly a mile and a half, carrying not less than eight fathoms, until Portland Head Light-house bears **NW.** ¾ **N.**, with eight fathoms, hard bottom. Now run for the light, passing midway between Pine Tree Ledge and Willard's Rock, leaving the former a third of a mile to the northward and the latter the same distance to the southward, and carrying not less than eight fathoms. On this course continue until you are within about half a mile of Portland Head Light-house and the easternmost of the Cape Elizabeth Light-houses bears **S.** by **W.** ¼ **W.**, when steer **N.** by **W.**, and follow the directions given on page 474.

Light-draught vessels may, in moderate weather, continue their course **NW.** ¼ **N.**, which leads almost directly over Pine Tree Ledge (with about four fathoms) and about two hundred and fifty yards to the southwestward of Jordan's Reef. When within a third of a mile of Portland Head Light-house, with eight fathoms, hard bottom, and Cape Elizabeth East Light-house bears **S.** by **W.**, steer **N.** by **W.**, and follow the directions previously given.

DANGERS

IN APPROACHING AND ENTERING PORTLAND HARBOR.

IV. ***Coming from the Southward and Southwestward, outside of everything.***—Vessels coming from the southward outside of all dangers keep five miles from Cape Elizabeth Light-houses. These two towers show plainly a considerable distance off; and the land to the southwestward of the lights

will appear as partly cleared and partly wooded slopes, with an undulating surface, dotted here and there with houses. To the northward, the islands in Casco Bay will appear as blue outlines, but their features are undistinguishable until more closely approached. Half-Way Rock Light-house will not be visible, as it is projected against the land to the northward. With the cape light-houses bearing **N.** and about five miles off, Portland Head Light-house will open to the eastward of them as a white tower showing against distant land. The land just clear to the eastward of the light-house is Bangs' Island. On a clear day, when five miles from Cape Elizabeth Light-houses, with Portland Head Light-house bearing **NW.** by **N.** ½ **N.**, some of the houses on Munjoy Hill may be seen just clear of the southern end of Bangs' Island,—the top of the observatory showing over Fort Preble. The range of White Mountains is very often visible over the cape, appearing as a blue outline,—**Mount Washington** showing as a pyramidal mountain with very regular outlines; but these mountains are, of course, only visible in clear weather. ***Dangers--Portland Harbor.***

Coming from the southward, along shore, Cape Elizabeth Light-houses will, of course, first appear, as they are visible from off the entrance to Saco. Thus viewed, they appear close together; and on approaching them, when they bear **NE.** ¾ **N.** and are five miles off, there will be seen, bearing about **N NE.**, a high bare island about three miles off. This is Richmond's Island, and on its summit will appear a large house and outbuildings. The island is destitute of trees, and has a gentle slope almost to the water's edge; and in the summer season the surface, mainly covered with grass, presents a beautiful appearance. The bare ledge which appears off the eastern end on a nearer approach is **Watts' Ledge.** ***Richmond's Island.***

When abreast of Richmond's Island a large can-buoy, painted red and black in horizontal stripes, will be seen to the westward. This is on *Old Anthony,* or *Vapor Rock,* and just to the southward of it, distant about half a mile, will appear the "Whistling Buoy," marking the southern approach to Portland Harbor. This buoy is shaped like a nun-buoy, stands about twelve feet out of water, and has a whistle on top,—giving from twenty to thirty continuous blasts a minute. It is placed in eighteen fathoms water, and bears from Cape Elizabeth East Light-house **S.** ⅞ **E.**, distant two miles and a quarter. When abreast of Cape Elizabeth you may pass close to the shore, where there is from four to six fathoms water; but, if unacquainted with the locality, it is better to pass about a mile and a quarter from the light-houses. This will lead you about a mile to the westward of a large black nun-buoy, and a little over a quarter of a mile to the eastward of a black can-buoy marked "T. R." in white letters. The former is on *Alden's Rock,* the latter on *Taylor's Reef.*

Vessels coming from the southward and southwestward, outside of everything, will first encounter the Hue and Cry Rocks. The southernmost of these ledges, called *West Hue and Cry,* has four and a half fathoms at low water, and bears **S SE.** from Cape Elizabeth Light-houses, distant two miles and three-quarters, and is not buoyed. Three-quarters of a mile **E.** from it is *East Hue and Cry,* a bad ledge, with eighteen feet at low water, which will be recognized by an iron can-buoy of the first class, painted black and marked No. 1, which is placed in ten fathoms on the southeastern side of the ledge. The shoalest spot bears **SE.** ¾ **S.** from Cape Elizabeth East Light-house, three miles distant. ***Hue and Cry Rocks.***

One mile and a half **N.** from the buoy on East Hue and Cry will be seen a black nun-buoy. This is on Alden's Rock, which is two miles **SE.** by **E.** from the East Light-house and four miles and three-quarters **S.** by **E.** ¼ **E.** from Portland Head Light-house. Four feet at extreme low tides is found upon this rock, and six feet at mean low water. It is a very dangerous rock, and the source of much uneasiness to mariners approaching Portland in thick weather. The buoy is of the first class (marked "A. R." in white letters on both sides) and is placed on the southern side of the rock in five fathoms, and is to be left to the westward by vessels bound in by this channel. ***Alden's Rock.***

Nearly half a mile **E.** by **N.** from Alden's Rock is an iron nun-buoy, painted red and black in horizontal stripes. This is on Corwin Rock, which has about nineteen feet at low tides and bears **SE.** by **E.** ¾ **E.** from the East Light-house, distant two miles and a quarter. The buoy is placed to the southeastward of the rock, and has "C. R." marked upon it in white letters. The channel across West Cod Ledge for vessels coming up from the southward leads between this rock and West Cod Ledge Rock, and is a mile and a quarter wide. ***Corwin Rock.***

West Cod Ledge Rock, on the northern side of this channel, has four and a half fathoms at low water, bears **SE.** ¾ **S.** from Portland Head Light-house four miles and a half, and **E.** ½ **S.** from the East Light-house, a little over three miles distant. It is not buoyed, and vessels bound in by this channel leave it to the northward. ***West Cod Ledge Rock.***

Mitchell's Rock lies well on the western side of the channel, and bears **S.** by **E.** ¼ **E.** from Portland Head Light-house, distant three miles and a half, and **E.** ⅛ **N.** from Cape Elizabeth East Light-house, a mile and three-eighths distant. It has five fathoms and a quarter, is not dangerous except in heavy weather, and is not buoyed.

Broad Cove Rock, which has seven feet at mean low water, lies off the mouth of Broad Cove at a distance of half a mile from shore. Shoal water exists in spots from this rock to the buoy, which is placed three-eighths of a mile **NE.** from the shoalest part of the ledge. The buoy is a first-class iron can, painted black, with the letters "B. C. R." ***Broad Cove Rock.***

marked upon it in white. It bears NE. by N. from Cape Elizabeth East Light-house, a mile and a quarter distant; and the shoal of the ledge bears from the same light-house NE. by N. ¼ N.

Trundy's Reef extends off from Trundy's Point in a northeasterly direction for nearly half a mile. Trundy's Point is a mile and a quarter N. from the cape light-houses. The reef is dry at low water a third of a mile from shore; but spots of shoal ground, with thirteen and seventeen feet at mean low water, exist between its end and the buoy, which is three-quarters of a mile from the point. This buoy is a first-class nun, painted black, (marked "T. R." in white letters,) and placed on the northeastern extremity of the shoal. It bears from Cape Elizabeth East Light-house NE. by N. ½ N., a mile and three-quarters distant, and from Portland Head Light-house S. by E. ¼ E., exactly the same distance. Willard's Rock is only three-eighths of a mile NE. from it; but vessels may go close to Trundy's Reef buoy, leaving it to the westward, and passing in good water. The current of flood sets on to this reef, and care must be taken to keep to the eastward of the buoy.

Trundy's Reef.

Willard's Rock. *Willard's Rock* (not buoyed) has five and a quarter fathoms, and bears NE. by N. from the East Light-house two miles and a quarter, and SE. by S. ¾ S. from Portland Head Light-house, one mile and three-quarters distant. Vessels using this channel leave it to the westward.

Pine Tree Ledge, with three fathoms, lies two-thirds of a mile NE. by N. ½ N. from Willard's Rock, and is not buoyed. It bears SE. ¼ E. one mile and a half from Portland Head Light-house, NE. by N. from the East Light-house nearly three miles, and breaks in heavy weather. The channel leads between it and Willard's Rock.

Jordan's Reef. Jordan's Reef, already described, (page 476,) is one mile SE. by E. from Portland Head Light-house and the same distance S. by W. from Ram Island. It has twenty-two feet at low water, and is the first danger met with to the northward of Pine Tree Ledge; and it is marked by a nun-buoy of the second class, painted red and black in horizontal stripes. This buoy must be left to the eastward by vessels bound in.

After passing Jordan's Reef buoy there are no obstructions until you are past Portland Head Light-house. (See pages 473–474.)

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PORTLAND HARBOR.

IV. ***Coming from the Southward and Southwestward, outside of everything.***—Keep five miles from Cape Elizabeth Light-houses until Portland Head Light-house bears NW. by N. ⅝ N., when there will be about twenty-five fathoms, hard bottom, and you may run for the light, crossing West Cod Ledge (midway between West Cod Ledge Rock and Corwin Rock) in twelve fathoms water. Continue this course for two miles and a quarter until the cape light-houses are in range on a bearing of SW. by W. and you are in eleven fathoms, hard bottom, when, if the sea is rough or your draught of water heavy, stand N. by E. nearly half a mile, to clear Willard's Rock. On this course the least water is eleven fathoms. This course and distance will bring Portland Head Light-house to bear NW. ¼ N., with eleven fathoms, rocky bottom; when you must run for the light until within half a mile of it and you are in eight fathoms water. Now steer N. by W., which will lead you safely up to Spring Point with nothing less than six fathoms water; after which the directions for the Inner Harbor (given on page 474) must be followed.

These courses pass two miles to the eastward of the Hue and Cry Rocks; nearly three-quarters of a mile to the southward of West Cod Ledge Rock; the same distance to the northward of Corwin Rock; three-quarters of a mile to the northward of Mitchell's Rock; three-quarters of a mile to the eastward of Broad Cove Rock buoy and Trundy's Reef buoy; a quarter of a mile to the northward of Willard's Rock; and a quarter of a mile to the southward of Pine Tree Ledge and Jordan's Reef.

Light-draught vessels may, in smooth weather, continue their course NW. by N. ⅝ N. for Portland Head Light-house until within a third of a mile of it, with seven and a half fathoms, and the East Light-house bears S. by W.; when N. by W. will lead them safely up to Spring Point.

Vessels coming from the Eastward, and wishing to use this channel, must bring Cape Elizabeth Light-houses to bear W. by N. ½ N., and run for them until Portland Head Light-house bears NW. by N. ⅝ N., with twelve fathoms, rocky bottom. Then steer for the light-house, and follow the directions given above.

DANGERS

IN APPROACHING AND ENTERING PORTLAND HARBOR.

V. ***Coming from the Westward, alongshore.***—This channel leads along the eastern shore of Richmond's Island and close in with the shore of Cape Elizabeth. The first danger encountered is Watts' Ledge, which lies off the eastern end of Richmond's Island at a distance of three-eighths of a mile. The dry ledge, which is barely covered at high water, is of considerable extent,—being about four hundred yards long. It lies close in with the island, and the sunken ledge extends off from its eastern end and has fourteen feet at mean low water three-eighths of a mile from shore. Vessels should not, when in this vicinity, stand to the westward of Cape Elizabeth East Light-house, bearing **NE.** ¼ **N.** ***Watts' Ledge.***

Passing Watts' Ledge, the next danger met with, which will be found on the eastern side of the channel, is called Old Anthony, or *Vapor Rock*, and has three fathoms at low water. It bears from the East Light-house **S.** by **E.** ½ **E.** one mile and three-quarters, and from the house on Richmond's Island **W.** by **N.** ½ **N.** two miles and a half. An iron can-buoy of the second class, painted red and black in horizontal stripes, is placed on the southern end of the rock in eight fathoms. The letters "O. A." are marked upon it in white, and vessels using the inshore passage leave it well to the eastward. Just to the southward of this buoy, half a mile distant, is placed the "Whistling Buoy," which is a guide to the southern approach to Portland Harbor. (See page 477.) ***Old Anthony.***

After passing Old Anthony, a black can-buoy will be seen bearing nearly **N.**, which is on Taylor's Reef, a group of rocks lying off the pitch of the cape at a distance of half a mile from shore. It extends in an **E NE.** and **W SW.** direction nearly half a mile, and has thirteen feet on the shoalest spots at low tides. There is an excellent passage inside of the reef, close to the cape shore. The buoy, which is of the second class, painted black, (marked "T. R." in white letters,) is placed in eight fathoms water on the eastern end of this reef, and is to be left to the westward by vessels bound in. From this buoy the East Light-house bears **NW.** ½ **N.**, distant three-quarters of a mile. ***Taylor's Reef.***

Alden's Rock lies on the eastern side of the passage, and vessels do not approach it unless on a wind beating in or out. It is two miles **SE.** by **E.** from the East Light-house and four miles and three-quarters **S.** by **E.** ½ **E.** from Portland Head Light-house. Six feet at mean low water is found upon this rock, which is marked by an iron nun-buoy of the first class, painted black, with the letters "A. R." on both sides. It is placed on the southern side of the ledge in five fathoms, and is to be left to the eastward by vessels using this channel. ***Alden's Rock.***

Mitchell's Rock is only dangerous in very heavy weather, and has five and a quarter fathoms at low water. It bears **S.** by **E.** ½ **E.** from Portland Head Light-house, distant three miles and a half, and **E.** ⅛ **N.** from the East Light-house one mile and three-eighths, and is not buoyed.

Broad Cove Rock, a dangerous rock with seven feet at mean low water, lies off the mouth of Broad Cove at a distance of half a mile from shore. Shoal water exists in spots from this rock to the buoy, which is placed three-eighths of a mile **NE.** from the shoalest part. This buoy is a first-class iron can, painted black, with the letters "B. C. R." marked upon it in white. It bears **NE.** by **N.** from the East Light-house, one mile and a quarter distant; and the shoal of the ledge bears **NE.** by **N.** ½ **N.** from the same light-house. ***Broad Cove Rock.***

Trundy's Reef, also on the western side of the channel, extends off from Trundy's Point nearly half a mile in a northeasterly direction. It is dry at low water a third of a mile from shore; but spots of shoal ground with thirteen and seventeen feet at mean low water exist between the end of the reef and the buoy, which is three-quarters of a mile from the point. The buoy is a first-class nun, painted black, (marked "T. R." in white letters,) and is placed off the end of the shoal in ten fathoms. It bears from the East Light-house **NE.** by **N.** ½ **N.**, one mile and three-quarters distant, and **S.** by **E.** ½ **E.** from Portland Head Light-house,—being equidistant from both light-houses. (See page 478.) ***Trundy's Reef.***

Willard's Rock has five and a quarter fathoms at low water, bears **NE.** by **N.** from the East Light-house two miles and a quarter, and **SE.** by **S.** ¾ **S.** from Portland Head Light-house one mile and three-quarters, and is to be left to the eastward by vessels using this channel.

Pine Tree Ledge lies **NE.** by **N.** ½ **N.** from Willard's Rock, and is not in the way unless a vessel is tacking to the windward. It has three fathoms on it at lowest spring tides and is not buoyed. From Portland Head Light-house it bears **SE.** ½ **E.** one mile and a half, and from the East Light-house **NE.** by **N.**, nearly three miles distant, and is to be left well to the eastward. ***Pine Tree Ledge.***

Jordan's Reef (already described on page 476) is one mile **SE.** by **E.** from Portland Head Light-house and the same distance **S.** by **W.** from Ram Island. It has twenty-two feet at low water, and is marked by a nun-buoy of the second class, painted red and black in horizontal stripes. This buoy must be left to the eastward by vessels bound in; and after passing it there are no obstructions until you are up with Bangs' Island. ***Jordan's Reef***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PORTLAND HARBOR.

V. ***Coming from the Westward, alongshore.***—When five miles from Cape Elizabeth Light-houses, having them bearing **NE. ¾ N.**, with Richmond's Island (centre) bearing **N NE.**, three miles distant, and you are in about twenty fathoms water, steer **NE. ½ E.** until abreast of the lights, with the East Light-house bearing **NW. ½ N.**, one mile and a quarter distant. This course and distance will lead, with not less than sixteen fathoms, up with the black can-buoy on Taylor's Reef, which leave to the westward about a quarter of a mile off, and steer **N. ½ E.**, carrying not less than seven fathoms, until you are abreast of the large nun-buoy on Trundy's Reef and Portland Head Light-house bears **N.** by **W. ¾ W.**, when there will be about nine fathoms, and the East Light-house will bear **SW.** by **S. ¼ S.** Then steer **N.** by **W.** for the southern end of Bangs' Island, carrying not less than six fathoms water. After passing Portland Head, alter the course to the westward sufficiently to give the buoy on Catfish Rock a berth to the eastward of about one hundred yards, and pass it in eight fathoms; after which continue the course up the harbor as directed on page 474.

These courses pass a mile to the eastward of Watts' Ledge; three-eighths of a mile (or seven hundred and fifty yards) to the westward of Old Anthony; seven hundred and fifty yards to the eastward of Taylor's Reef; half a mile to the westward of Mitchell's Rock; two hundred and fifty yards to the eastward of Trundy's Reef; three hundred yards to the westward of Willard's Rock; and half a mile to the westward of Jordan's Reef.

DANGERS

IN APPROACHING AND ENTERING PORTLAND HARBOR.

VI. ***Intending to enter by the White Head Passage.***—The **White Head Passage** into Portland Harbor leads between the northern shore of Bangs' and the southern shore of Peak's islands. Its general course is **E SE.** and **W NW.**, and it is three-quarters of a mile long with an average width of a third of a mile. White Head, which gives the name to this passage, is a bold bare bluff, with precipitous face, forming the northeastern extremity of Bangs' Island. It is eighty feet high, and the summit is crowned with a stunted growth of spruce and fir. The shore of Peak's Island, which forms the northern side of the passage, is low, in some places marshy, and backed by woods.

White Head.

This is an excellent channel for steamers, and for sailing-vessels with a fair wind; but if the wind be at all scant or light it is unsafe to attempt to go through, as there is danger of being set under White Head, where calms and light baffling winds will be met with, which are likely to carry vessels ashore on White Head Ledge. On the other hand, if, in avoiding the southern shore, they should be set by the current of flood too far over towards Peak's Island, there will be great risk of getting on to Trott's Rock. Both of these ledges are marked by iron spindles, and with a fair wind it is easy to pass between them; but strangers should not attempt the passage unless compelled by necessity.

General Remarks.

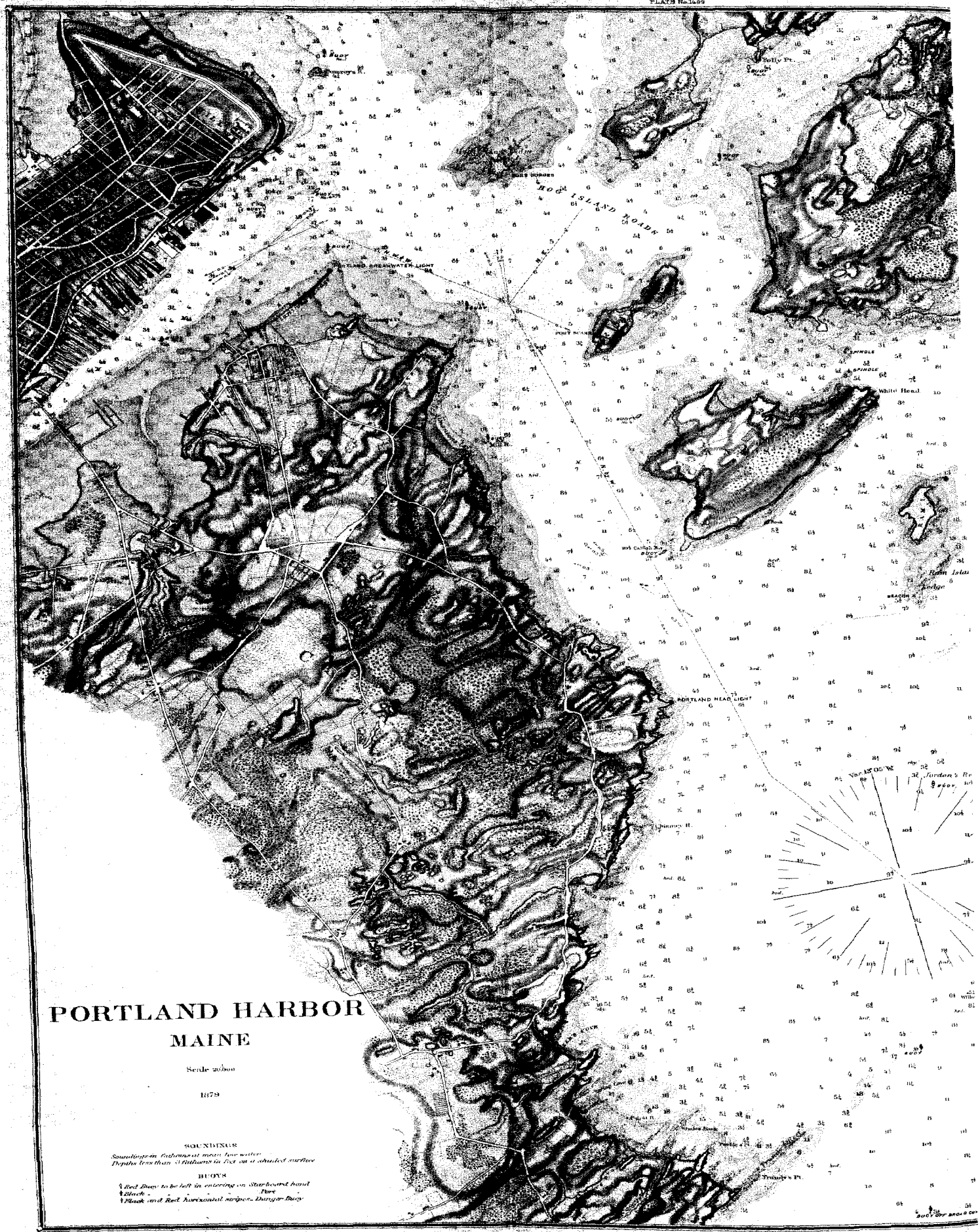
Coming from the eastward, and designing to enter Portland Harbor by this channel, there are no dangers met with until the passage is fairly entered, when two iron spindles will be seen ahead—one on the northern and the other on the southern side of the channel. That on the northern side is on Trott's Rock, which is a ledge, bare at low water, lying almost exactly midway between Peak's and Bangs' islands, about three hundred and fifty yards from the former. It is not safe to pass between this ledge and Peak's Island. An iron spindle with a wheel on top, all painted red, is placed upon the bare part of the rock, and is to be left to the northward. Vessels may go quite close to it, as the rock is bold-to on its southern side.

Trott's Rock.

On the southern side of the channel, directly opposite to Trott's Rock spindle, is the spindle on White Head Ledge, a long ledge making off from White Head in a northerly direction one hundred and fifty yards. It is bare at low water, and has an iron spindle on its northern end, with a spherical top, all painted black. This spindle is one hundred and seventy-five yards to the southward of Trott's Rock spindle, and the two mark the width of the channel.

White Head Ledge.

After passing these two ledges care must be taken, if the vessel be of heavy draught, to give the Peak's Island shore a good berth to the northward, (say not less than a quarter of a mile,) as it is shoal and rocky. Four hundred yards **W.** by **N. ¼ N.** from Trott's Rock spindle is *a rock awash at low spring tides*, nearly three hundred and fifty yards from shore. Again, half a mile **W NW.** from Trott's Rock will be seen a small, round, rocky islet near the western end of the passage, about two hundred and fifty yards from the shore of Peak's Island. *A bad ledge, mostly bare at low water*, however, extends in a southwesterly direction from this islet one hundred and fifty yards; and two feet at low water is found on the end of this ledge, four hundred yards from the Peak's Island shore.



PORTLAND HARBOR
MAINE

Scale 20000

1879

SOUNDINGS

Soundings in fathoms at mean low water
Depths less than 3 fathoms in feet on a shaded surface

BUOYS

Red Buoys to be left in entering on Starboard hand
Black - - - Port
Black and Red horizontal stripes - Danger Buoy


Holly Pt.
BOSTON ISLAND ROADS
Var 15° 10' W.
SPINDLE
White Head
Ram Island
Ledge
BEACON R.
BUOY
Wilds Rock
PORTLAND HEAD LIGHT
Var 15° 05' W.
Jordan's Reef
Chimney R.
Pine Tree Ledge
Whitrel Rock
Trundy's Pt.
BUOY OFF BROAD COVE ROCK
Nautical Miles

The northwestern point of Bangs' Island must receive a berth to the southward of not less than four hundred yards, as there is shoal water off that point to a distance of three hundred yards. Vessels of light draught may, however, go within two hundred and fifty yards.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PORTLAND HARBOR.

VI. ***Intending to enter by the White Head Passage.***—Pass between Outer and Inner Green islands (avoiding Green Island Reef and Johnson's Rock, see page 437) with not less than seven fathoms water, and steer **W. ½ N.** This course will carry you safely up to White Head with not less than eight fathoms water. When within half a mile of the head the two spindles will be seen ahead, and you must steer so as to pass directly between them in four and three-quarter fathoms. When past them, steer **W.** by **S.** for a quarter of a mile, carrying twenty-five feet water, until the small islet lying to the southward of the southwestern point of Peak's Island bears **N.** and the southern angle of Fort Scammel (on House Island) **NW.** by **W. ½ W.** Then steer **NW.** for the middle (which is also the lowest part) of House Island, carrying four fathoms water, until Fort Preble is entirely shut in behind the southern end of House Island,—the latter bearing **W. ½ N.**,—with a depth of five and a half fathoms, muddy bottom. Then steer **W. ¾ S.**, giving Bangs' Island a berth of four hundred yards to the southward and House Island a berth of one hundred and fifty yards to the northward, and carrying not less than four fathoms water. On this course, when Portland Head Light-house bears **S. ¼ E.**, and Breakwater Light-house **NW.**, (seen just clear of Spring Point,) and you have eight fathoms and are in the main channel, steer **N.** by **W.**, and follow the directions for the harbor given on page 474.

VII. ***To enter by White Head Passage and anchor in Hog Island Roads.***—Steer the courses given above until you enter the main channel, when steer **N.** by **W.** until past Spring Point, and Breakwater Light-house bears **NW.** by **W. ¾ W.** Then steer **NE.**, and anchor at pleasure in from four to seven fathoms, soft bottom. There is good anchorage in the roads in from four to six fathoms, soft bottom; and it is a roadstead very much used by coasters and fishermen, who anchor merely for a night and wish to avoid the risk of having to beat out of the Inner Harbor.

In the passage leading from Hog Island Roads (between Peak's Island and Great and Little Hog islands) into Hussey's Sound, two spar-buoys have been placed for the guidance of vessels bound through. The first met with is a black spar (No. 1) marking the northwestern end of *Peak's Island Shoal*, and placed in fourteen feet water. The other buoy, which is painted red and marked No. 4, is placed in three fathoms just to the southward of what is known as *Folly Point Shoal*. Vessels passing through this channel should leave the last-mentioned buoy close-to to the northward.

BACK COVE.

On the northern side of the city of Portland, between it and the mainland, is a large nearly circular cove, called Back Cove. It is nearly all dry at low water; but a narrow slue leads to the southward, along the eastern side of the cove, to a large pier covered with warehouses, &c, situated on the northern side of Portland Peninsula, and on the southern shore of the cove. The entrance to Back Cove is crossed by two bridges,—the easternmost being a railroad bridge, while the other, which is a quarter of a mile to the westward, is called **Tukey's Bridge**; and both have draws. The entrance is carefully buoyed, and marked by piles driven on the edges of the channel.

Vessels designing to enter Back Cove must steer **N.** by **W. ¼ W.** from off Spring Point, leaving **Hog Island Ledge** two hundred yards to the eastward and **Pomeroy's Rock** the same distance to the westward. The latter rock is marked by a black spar-buoy (No. 1). After passing this buoy, the channel turns gradually to the westward towards another black spar-buoy (No. 3) six hundred and fifty yards to the northwestward. This buoy is on the northeastern point of the flats which make off from the base of Munjoy's Hill, and should receive a good berth to the westward. When up with this buoy a red buoy (No. 2) will be seen ahead on the northern side of the channel; and the course leads to the westward, between it and the black buoy,—making a straight wake for the draw in the railroad bridge. No directions can be given beyond the bridges, and vessels bound into the cove always take a pilot. Not less than twenty-two feet at low water can be taken up to the bridge.

PRESUMPSCOT RIVER.

Three-eighths of a mile **W.** by **N.** from **Mackey's Island** is the end of a long narrow point, about sixty feet high, fringed with woods on its eastern end, and having upon its summit the large square building used as the **U. S. Marine Hospital**. This is **Martin's Point**, and is the western point of entrance to Presumpscot River,—**Mackey's Point**, about six hundred and fifty yards **NE.** from it, forming the eastern point. This point is about twenty feet high, cleared and settled, and a draw-bridge connects it with Martin's Point. Above this the river extends about two miles in a northerly direction to the village of **Falmouth Corner**.

Presumpscot River. Half a mile above Martin's Point bridge, and on the western shore of the river, are situated the **Casco Iron Works**; and a channel with six feet at low water, but quite narrow, leads in nearly a straight line from the draw to the pier of the works. Above this point the river is bare at low water except in a very narrow and extremely crooked slue, through which six feet at low water may be taken. No intelligible sailing directions can be given for this channel, and strangers must always take a pilot.

The principal trade in Presumpscot River is to and from the Portland or Casco Iron Works.

LIGHT-HOUSES IN CASCO BAY.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		m. s.	Feet.	
Cape Elizabeth Light-house, W.	43 33 50	70 12 9	4 40 48.6	Fixed.	.....	143	18
Cape Elizabeth Light-house, E.	43 33 56	70 12 1	4 40 48.1	Revolving.	1 0	143	18
Portland Head Light-house	43 37 22	70 12 29	4 40 49.9	Fixed.	.....	101	15
Portland Breakwater Lt-house	43 39 18	70 14 8	4 40 56.5	Flashing red.	0 15	23	8
Half-Way Rock Light-house	43 39 21	70 2 13	4 40 8.9	F. V. R. F.	1 0	80	15

TIDES IN CASCO BAY.

Stations for observations of tides have been established at various places in Casco Bay during the progress of the survey of the different harbors by the Coast Survey. Full results have been obtained from the gauges at Portland, Peak's Island, Birch Point, (the western end of Cousin's Island,) Harpswell Harbor and Quohog Bay, as follows:

	Portland.	Peak's Island.	Birch Point.	Harpswell.	Quohog Bay.
Corrected Establishment	$11^h\ 17^m$	$11^h\ 3^m$	$11^h\ 10^m$	$10^h\ 55^m$	$11^h\ 12^m$
Mean Rise and Fall of tides	9.1 ft.	9.0 ft.	9.2 ft.	8.9 ft.	8.8 ft.
Mean Rise and Fall of Spring tides	9.5 ft.	9.7 ft.	9.7 ft.	9.4 ft.	9.6 ft.
Mean Rise and Fall of Neap tides	8.7 ft.	8.4 ft.	8.6 ft.	8.4 ft.	8.2 ft.
Mean duration of Rise	$6^h\ 15^m$	$6^h\ 18^m$	$6^h\ 12^m$	$6^h\ 19^m$	$6^h\ 20^m$
Mean duration of Fall	$6^h\ 10^m$	$6^h\ 7^m$	$6^h\ 13^m$	$6^h\ 6^m$	$6^h\ 5^m$
Rise of highest tide observed	11.3 ft.	11.1 ft.	11.4 ft.	11.1 ft.	11.0 ft.

For the use of mariners in the determination of the time of high and low water for every day in the year, the Coast Survey Office publishes yearly "**Tide-Tables for the Atlantic Coast.**" These may always be had at any nautical store in any of the Atlantic ports.

CURRENTS IN PORTLAND HARBOR.

A tolerably full set of current observations has been made in Portland Harbor, and the direction and force of the tidal current ascertained at different periods of ebb and flood tide. The following table will show these data for each of the three stations occupied:

TABLE.

No.	STATION.	First Quarter.		Maximum.		Third Quarter.		Flood or Ebb.
		Set.	Drift.	Set.	Drift.	Set.	Drift.	
1	A quarter of a mile NW. by W. from the Breakwater Light-house.	W. by S. ½ S.	0.2	W SW.	0.7	SW. by W. ½ W.	0.4	Flood.
		NE. ½ E.	0.4	NE. by E. ½ E.	0.8	E. by N. ½ N.	1.0	Ebb.
2	Off Fort Preble	N. ½ E.	0.2	N. ½ W.	0.6	NE. ½ N.	0.3	Flood.
		S. ½ E.	0.3	S. by E. ½ E.	0.6	SE. ½ E.	0.4	Ebb.
3	Three-quarters of a mile N. from Portland Head Light-house.	NW. ½ N.	0.3	NW. by N. ½ N.	0.5	NW. by W.	0.3	Flood.
		S. by E.	0.4	SE. by S. ½ S.	0.8	SE. ½ S.	0.3	Ebb.

The observations from which the above results were obtained were made, as far as practicable, when the influence of the wind was small. The bearings are magnetic, and the drift per hour is in nautical miles.

VARIATION OF THE COMPASS.

The variation of the magnetic needle in Casco Bay for 1879 is, in the eastern part of the bay, 13° 50′ W., and in the western part, 13° 30′ W. The annual increase is a little over 2′.

ICE IN CASCO BAY.

The formations of ice in this bay are entirely local in their character, and, except during severe winters like that of 1874–75, do not offer any very serious obstruction to the movements of vessels; but in that memorable winter the formations were more extensive and of longer duration than had ever before been known within the memory of the inhabitants. Beginning during the latter part of December, 1874, the ice continued to increase in extent and thickness until about the last of February, 1875,

when it became a serious obstruction to navigation,—rendering the movements of vessels impossible from January 15th to the middle of March. In the approaches to the bay large masses of drift-ice moving to and fro caused considerable hindrance to sailing-vessels from the latter part of January to the 4th of March; but the movements of steamers were not materially affected by it. In ordinary winters the passages between the islands and the approaches to the different harbors and sounds are usually closed during January and February, and, as a rule, coasting vessels rarely attempt them during the winter months. **Ice in Casco Bay.**

The most favorable winds for causing large formations of ice in Casco Bay are those from **N.** to **W.** Winds from **N.** to **NE.** are most effectual in clearing the bay of ice. Southerly winds cause a heavy swell, which assists in breaking up the formations. The tidal current in the bay has but little effect upon the ice formations within its limits. The ebb-tide has a tendency to remove light formations, but has no effect upon the heavy ice unless assisted by strong northeasterly winds. The influence of the flood-tide is to hold ice in the bay unless overcome by strong winds from the northeastward; and during its flow is the most favorable time for ice to form and congeal into solid masses.

Portland Harbor.—It is rarely that this harbor is so obstructed by ice as to become a serious hindrance to navigation. During the winter of 1874–'75 the movements of sailing-vessels were much retarded by heavy local formations from about January 1st to February 22d; but after that time the ice rapidly disappeared,—there being only small quantities of drift-ice after the fifth of March. The Inner Harbor during the above period was almost entirely closed to navigation, as is usually the case,—this portion of the harbor proper being but little used during the winter months. The movements of steam-vessels in the harbor and approaches, except during very severe winters, like that of 1874–'75, are but little interfered with by the formations; and the assistance of a tug-boat is generally sufficient to overcome all difficulty.

Winds from **N.** to **W.** assist materially in clearing the harbor and its approaches of drift-ice; while **NE.** winds have a tendency to break up the local formations and hold the ice in the harbor. It may be remarked that the current of ebb-tide has much influence in removing ice from the harbor, while that of flood-tide backs the ice up and prevents its egress.

RICHMOND'S ISLAND HARBOR.

The southeastern extremity of Cape Elizabeth is a somewhat precipitous bluff, called High Head, and is three-eighths of a mile to the southward of the light-houses. The southern shores of the cape take a westerly direction from High Head for half a mile to a grassy gently sloping point, called **McKinney's Point.** **High Head**

From McKinney's Point the shore-line turns abruptly to the northward, and sweeping gradually around by **W.** to **SW.**, forms a large semicircular cove a mile and a quarter wide. It has no authenticated name, but is often called Seal Cove, and has from three to six fathoms water in it; but the holding-ground is poor and the cove full of rocks and ledges. It is, therefore, unsafe for strangers; and Richmond's Island Harbor being so near it is never used. **Seal Cove.** Its western point, which is low, sandy and backed by wooded slopes, is connected at extreme low tides by a sand-bar, with an island eight hundred yards **S SE.** from it, called Richmond's Island. The shores of Seal Cove are gently sloping, cleared, settled and carefully cultivated. A summer hotel, called the **Ocean House,** stands on its eastern shore and is a conspicuous object.

Richmond's Island is of moderate height, bare of trees with the exception of a very small grove near the summit, and is about a mile long and eight hundred yards wide at its widest part. Its eastern extremity, called **East Point,** is one mile **SW.** by **W.** ½ **W.** from High Head,—the southern extremity of Cape Elizabeth. The island lies nearly **E.** and **W.**, and a large house with outbuildings stands near the highest part and is visible in nearly every direction. East Point is low, and from it the land rises gradually to the middle of the island. The western end is bluff and precipitous, as is also part of the northern face; but as a rule the shores slope gently and gradually to the water's edge. **Richmond's Island.**

The southern face of Richmond's Island is indented by three coves: The most easterly, called **Broad Cove,** is contained between East Point and **Watts' Point,** (a low bare point a quarter of a mile to the southward of the former,) and has good water in it, but is of no importance. Next to the westward is Clam Cove, about midway between the eastern and western ends of the island. It is contained between **Adams' Head** (a long narrow point making out from the southern shore a quarter of a mile **SW.** from Watts' Point) and **Western Head,** (another long and low point a quarter of a mile **W.** from Adams' Head,) and is full of ledges and is of no importance. On the western side of Western Head is **Muscle Cove,** deep and unobstructed, which is the westernmost of the indentations on the southern shore. There are some small coves on the northeastern face of the island, but they are of no importance. **Clam Cove.**

On the northern side of Richmond's Island, between it and the southern shore of Cape Elizabeth, is formed Richmond's Island Harbor. This, which is an excellent harbor of refuge, presents a safe anchorage with the wind from any point between **N.** and **SW.**, and is easily entered when vessels cannot get into Portland. It is a large and commodious cove, formed by the shores of the cape on the north, Richmond's Island on the south, and a long sand-spit, dry at extreme low tides, on the east. This sand-spit, when dry, connects the island with the mainland.

The cove forming the harbor is a mile wide between the western end of Richmond's Island and the main, and three-quarters of a mile wide measuring in an **E.** and **W.** direction. It has but few obstructions and may be safely entered at all times; and the holding-ground is good,—the bottom being sand and clay.

DANGERS

IN APPROACHING AND ENTERING RICHMOND'S ISLAND HARBOR.

I. *Coming from the Eastward.*—The first obstruction met with by vessels coming from the eastward and bound into Richmond's Island Harbor is Watts' Ledge, which lies off Watts' Point, three-eighths of a mile from shore. The dry ledge, which is barely covered at high water, is of considerable extent,—being about a quarter of a mile long. It lies close in with the point, and the sunken ledge extends off from its eastern end, and has fourteen feet at mean low water three-eighths of a mile from shore. It is unsafe, when in this vicinity, to go to the westward of Cape Elizabeth East Light-house bearing **NE. ¾ N.** until you are to the westward of Watts' Point.

Watts' Ledge.

After passing Watts' Ledge the course leads along the southern shore of Richmond's Island, and there are no dangers until you are up with West Ledge, which extends off from the western end of the island nearly two hundred yards in a **W.** direction, and is mostly bare at low water. The western end of the island should receive a berth of about a quarter of a mile to avoid this ledge, which is not buoyed.

West Ledge.

Rounding the western end of the island the course leads along the northern shore, and with a fair wind there are no dangers; but, if obliged to beat up to the anchorage, look out, when standing to the northward, for Chimney Rock. This ledge, bare at low water, lies on the northern side of the channel, three-quarters of a mile **NW.** by **W. ½ W.**, from the wharf on the northern side of Richmond's Island, and three-eighths of a mile (seven hundred and fifty yards) to the southward of the mainland. A small, low, grassy island, about two hundred yards long in an **E.** and **W.** direction, lies four hundred yards **NW.** from the rock, and is called **Ram Island.** Chimney Rock lies **N NE.** and **S SW.**, and is two hundred and fifty yards long; and at low water the bare rock is over one hundred yards long. *A rock with seven feet at low water* lies off its northeastern end at a distance of one hundred and fifty yards. A black spar-buoy (marked No. 3) is placed in five fathoms water on the southeastern end of the ledge.

Chimney Rock.

Nearly a quarter of a mile **E.** from Ram Island lie three small bare rocks, surrounded by ledges, called The Brothers. They are an eighth of a mile **NE.** by **N.** from Chimney Rock and are not in the way of vessels bound in or out with a fair wind. Vessels sometimes anchor under the northern shore of the harbor, and these must be careful to give both Chimney Rock and The Brothers a good berth to the westward.

The Brothers.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING RICHMOND'S ISLAND HARBOR.

I. *Coming from the Eastward.*—When the West Light-house bears **N NE.**, one mile and a half distant, and you are in sixteen fathoms water, steer **W. ¼ S.**, giving Richmond's Island a berth of about half a mile and carrying eight fathoms water. Continue this course until the western extremity of the island bears **N NE.** and there is eleven fathoms, soft bottom, when steer **N. ½ W.**, giving West Ledge a berth of three hundred yards to the eastward, or the point of the island a berth of a quarter of a mile. On this course there will be not less than nine fathoms, and, when the West Light-house opens to the northward of Richmond's Island and bears **E NE.**, steer for it, and if of heavy draught anchor in from four to seven fathoms when the wharf bears **E.** *If of light draught,* continue the **E NE.** course towards the head of the cove, and anchor at pleasure. The bottom is of clay, with a crust of coarse sand from six inches to a foot in thickness.

With the wharf bearing **S.** by **E.**, good anchorage will be found in ten feet at low water on the above course.

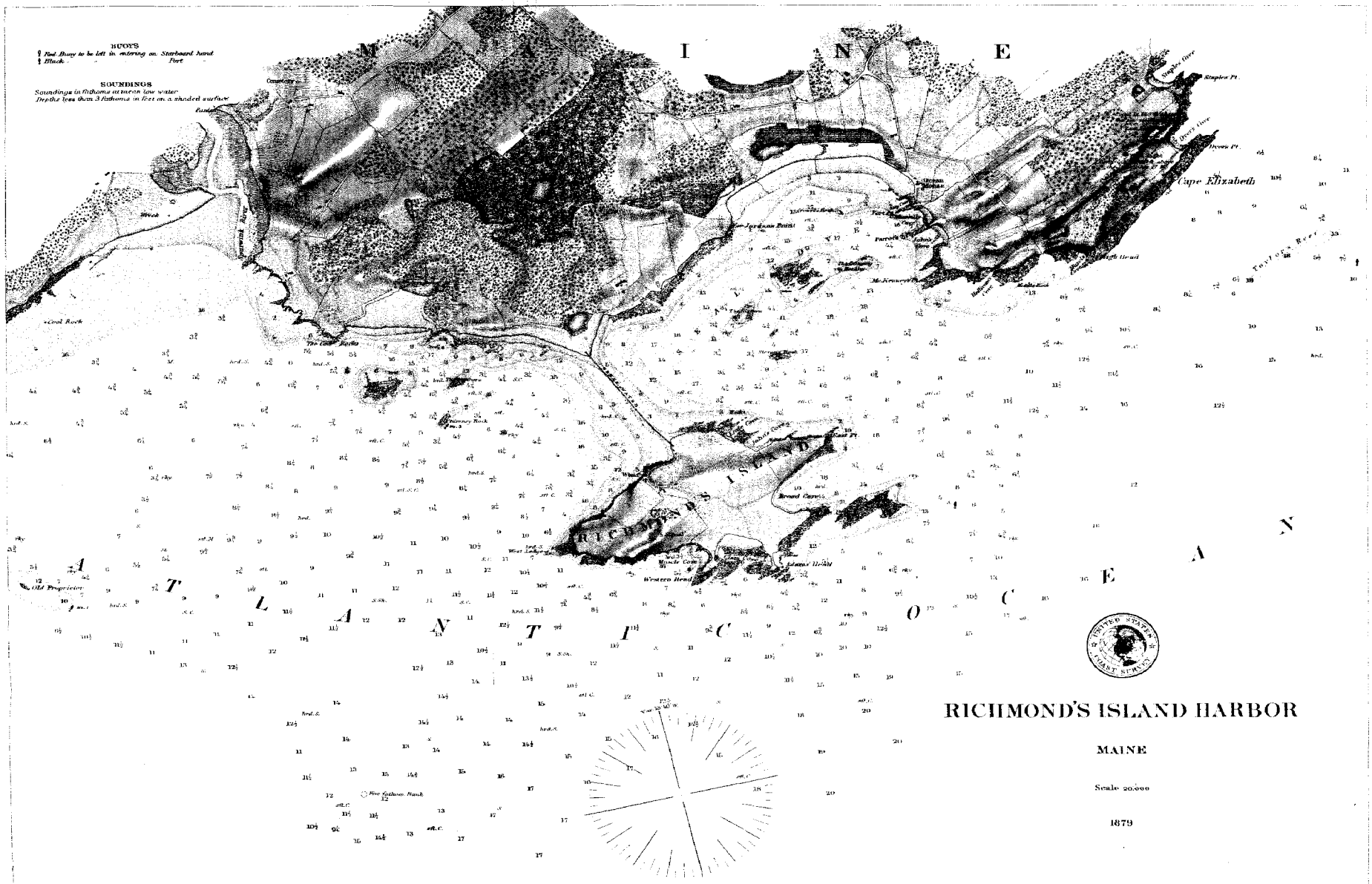
DANGERS

FOR APPROACHING AND ENTERING RICHMOND'S ISLAND HARBOR.

II. *Coming from the Westward.*—Vessels bound into Richmond's Island Harbor from the westward will find no obstructions in the way unless beating to windward, when they must look out for The Old Proprietor, which is bare at half-tide, and lies nearly two miles **W. ¾ N.** from the western end of Richmond's Island. The bare ledge should receive a berth of at least two hundred and fifty yards. A black spar-buoy (marked No. 1) is placed in five fathoms on the southeastern side of the ledge.

The Old Proprietor.

PLATE No. 1880



RICHMOND'S ISLAND HARBOR

MAINE

Scale 20,000

1879

Topography reduced by J. Lambert Brauchtsman.

Topography Engraved by S. Siebert. Title by J.S.S. Throop.

Statute Miles

Nautical Miles

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING RICHMOND'S ISLAND HARBOR.

II. ***Coming from the Westward.***—Bring the West Light-house to bear **E NE.** and the house on Richmond's Island **E.** by **N.** ½ **N.**, distant three miles. Then steer for the light-house **E NE.**, which course will lead to the anchorage. This course passes three-quarters of a mile to the southward of The Old Proprietor and three hundred and fifty yards to the northward of West Ledge.

LIGHT-HOUSES.

NAMES.	Latitude.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		m. s.	Feet.	
Cape Elizabeth Light-house, E.	**43 33 56**	**70 12 1**	**4 40 48.1**	Revolving.	**1 0**	**143**	**18**
Cape Elizabeth Light-house, W.	**43 33 50**	**70 12 9**	**4 40 48.6**	Fixed.	.....	**143**	**18**

TIDES.

Corrected Establishment	**11h 30m**
Mean Rise and Fall of tides	**9.1 ft.**
Mean Rise and Fall of Spring tides	**11.0 ft.**
Mean Rise and Fall of Neap tides	**7.6 ft.**
Mean duration of Rise	**6h 20m**
Mean duration of Fall	**6h 15m**
Mean duration of Stand	**0h 35m**
Rise of highest tide observed	**10.4 ft.**

CURRENTS.

The set of the tidal current does not exceed four-tenths of a mile per hour, and its direction in the harbor as well as outside is much influenced by the wind.

VARIATION OF THE COMPASS.

The magnetic variation for 1879 is **13° 30′ W.**, with an annual increase of about **8′**.

SACO BAY.

Three miles to the westward of Richmond's Island is Prout's Neck, the northern point of entrance to Saco Bay, which lies **N.** and **S.**, is six miles long, and in shape is nearly a semicircle. Its shores are low, generally well wooded, and thinly settled except at its southern headland, called **Fletcher's Neck**, where there is quite a village. **Saco River** (upon the banks of which are built **Saco** and **Biddeford**, two important manufacturing towns) empties into this bay just to the northward of Fletcher's Neck. There are a number of small islands in Saco Bay,—some near Prout's Neck; but the greater number are in the southern part of the bay, near the entrance to Saco River.

Prout's Neck.

Prout's Neck, the northernmost point of this bay, is a peninsula or neck of land extending in a southerly direction from the mainland, and is three miles to the westward of Richmond's Island and a little over five miles from Cape Elizabeth. The land is low, and the centre of the neck is occupied by a thick grove of spruce and fir; but the rest of the surface is dotted thinly with various kinds of trees. Seen from the westward, one or two houses and some cleared land show on its western shore.

Dunstan River.

On the western side of Prout's Neck empties Dunstan River, a small shallow stream, of no commercial importance, and nearly dry at low water. Its shores are low and sandy, with a thin growth of spruce, pine and other trees scattered along their length.

Little River.

From the mouth of Dunstan River a smooth sand-beach, backed by low, thinly wooded and grassy lands, extends in a **W.** by **S.** direction for two miles to Little River, another small shallow stream, almost entirely bare at low water. On the southern shore of this river pine and spruce woods begin, and the shore, faced by a fine white beach, runs **SW.** for two miles to another small inlet, called **Goose Fair Creek.**

Three-quarters of a mile **SW.** from Little River are the large hotels and other houses of the summer resort known as **Old Orchard Beach.** These houses, being painted white, form prominent landmarks seen against the dark woods behind them; and the beach is extremely white.

SACO RIVER.

Stage Island.

From Goose Fair Creek the shore-line runs **S.** ¼ **W.** for a little over two miles, still preserving the same character—a fair white beach backed by wooded land—to the entrance to Saco River. The mouth of this river will be recognized by a long granite pier or breakwater extending off from the northern shore in an **E.** by **S.** direction for eleven hundred yards. The entrance is between this breakwater and two small islands, bare of trees, which lie off the northern shore of Fletcher's Neck. The easternmost of these has on its summit a large round tower of rough

stone, surmounted by a cap. It is called Stage Island, and the tower is called **Stage Island Monument.** The small round islet to the westward of it is **Basket Island.**

Saco River is a little over three hundred yards wide at its mouth; and the northern shore at the mouth is simply the white sand point which forms the southern end of **Ferry Beach.** Ellis' Point, half a mile above, is wooded with spruce, and has two or three houses on its extremity; but thence to Ferry Wharf, nearly three-quarters of a mile from the mouth, the shore is composed of meadow-grass and marsh. The southern shores of the river are higher,—averaging forty or fifty feet above high-water mark,—but they rise very gently and do not attain that height for two or three hundred yards back. They are quite thickly settled.

Ellis' Point.

The course of the lowest reach of Saco River from the mouth to **Ferry Wharf** is **W NW.**, and the distance three-quarters of a mile. Just above this wharf the river contracts to a width of less than one hundred yards and turns **N NW.**, running, with deep water and some velocity, about four hundred yards to Chandler's Point, on the eastern shore of the river. The shores are partly wooded and partly grassy, with occasional houses, warehouses and shanties on the banks.

Chandler's Point.

At Chandler's Point the river widens out to about six hundred yards with a very shallow channel, and takes a general course **W NW.** for a little over two-thirds of a mile to **Johnston's Wharf,** which is the westernmost of the two large wharves on the southern shore. On the northern side much of the width of the river is occupied by salt-meadow, and both shores are wooded.

Above Johnston's Wharf the stream contracts to a width of one hundred and fifty yards and takes an abrupt turn to the northward. Thence with various turns and windings it runs for three-quarters of a mile (**W NW.** being the general direction) to the eastern extremity of a long, narrow, wooded peninsula, called Thunder Island, which lies about **E.** and **W.** About midway of its length, on the southern side, is a large pier or wharf, called **Chase's Wharf**; and on its western extremity is a rectangular pier, called **Thunder Island Pier.** Here the river takes a short turn to the northward, and then runs in a **NW.** by **W.** direction for two-thirds of a mile to the towns, where its greatest width, between Biddeford and Saco, is a quarter of a mile.

Thunder Island.

One-third of a mile above Thunder Island Pier, and opposite to **Brickyard Wharf,** (on the Saco side,) four wooded islets lie in the middle of the river. They are joined to each other by marsh so as to form one island, lying **W NW.** and **E SE.**, and about four hundred yards long. This island divides the channel,—that which passes to the right and along its northern shore being the deeper of the two, and leading directly to Saco; but both channels unite by a passage on the western side of this island, so that vessels, especially steamers, may go either way. The channel leading to the left, along the southern shore of the island, is shallower than the northern passage and leads to Biddeford. Vessels may use the northern channel, if bound to Biddeford, until they are past the island, and then, skirting its western end, may steer over for the town. In this course there will be not less than three feet at mean low water, with a mean rise and fall of eight and a half feet.

Saco upon the northern or right bank, and **Biddeford** upon the southern or left bank, are both manufacturing towns of considerable importance, but there is little commerce. Vessels come with coal and some with lumber, while others load with granite at the quarries near Thunder Island; but of regular commerce there is scarcely any,—goods being mostly shipped by railroad.

The whole distance by the river from the mouth to the towns is a little over three nautical miles.

No sailing directions can be given for entering Saco River, as the bar frequently shifts and it is necessary to take a pilot.

WINTER HARBOR.

From the mouth of Saco River the northern shore of Fletcher's Neck (which is low, thinly wooded, and faced by a sand beach) extends in a southeasterly direction a mile and a quarter to the entrance to Biddeford Pool. Back of the low lands the main shore of the neck is higher, cultivated and thickly settled; and seen from the bay the heights seem crowned with houses.

Fletcher's Neck.

The entrance to Biddeford Pool is an inlet not quite a hundred yards wide, which cuts into the northern shores of Fletcher's Neck between the village called **The Pool,** on the east, and a rocky head, bare of trees, but having several houses on its summit, on the west. The inlet retains its narrow limits for about three hundred yards, and then suddenly widens out into a broad bay, three-quarters of a mile in diameter, called Biddeford Pool,—most of it, however, bare at low water. Secure anchorage may be found in it for light-draught vessels in all winds, and even vessels of comparatively heavy draught (say twelve feet) may lie afloat at low water just inside the inlet. The village is built upon the eastern end of the neck, close to the shores of the Pool, and its only importance is derived from its advantages as a seaside resort. A large hotel occupies a prominent position facing the outer harbor, and during the season is usually crowded with guests.

Biddeford Pool.

Eastward from the village to Holman's Point, the eastern extremity of the neck, the land is bare of trees, rocky and barren; and some attempts at cultivation have been made, but with little success. Dangerous ledges and rocks lie off Holman's Point, and it is not safe to approach it from the southward.

Holman's Point.

Winter Harbor is contained between Fletcher's Neck and the islands lying to the northward of it, (including Wood Island,) and is a comfortable anchorage except in northerly winds; but in such a case vessels run into the Pool for safety. The harbor



Wood Island, Light House bearing N.W. by W.¼W. distant 1¾ Miles.

may be entered either to the northward or southward of Wood Island,—the latter dividing the approach into two channels; but the passage on the northern side of the island is the deepest and the one most commonly used. A description of both will, however, be given.

The most prominent island in Saco Bay lies off the entrance to Saco River, and forms also a natural breakwater for the protection of Winter Harbor from northeasterly winds. It is called Wood Island, and lies half a mile to the northward of Holman's Point and four and a half miles **S SW.** from Prout's Neck. It is low, lies **E.** and **W.**, is wooded with spruce and fir near the middle, and is about eight hundred yards long. On its eastern extremity is Wood Island Light-house, which consists of a white tower connected with the keeper's dwelling (which is painted white) by a wooden porch. The tower is forty-seven feet high, and shows a revolving red light, (flashing once every minute,) of the fourth order of Fresnel, from a height of sixty-two feet above sea level, visible thirteen miles. The geographical position of this light-house is **Wood Island and Light-house.**

Latitude ..... 43° 27′ 23″ **N.**
Longitude ..... 70° 19′ 45″ **W.**,

and it bears **SW. ¾ W.** from Cape Elizabeth Light-houses, distant eight miles and a half.

A fog-bell, struck by machinery, is placed near the light-house, and will be sounded two blows in rapid succession, then a pause of twenty-five seconds, followed by a single blow,—and so on, alternately, during thick and foggy weather. **Fog-signal.**

Two hundred and fifty yards to the westward of the western end of Wood Island lies a small, low, rocky island, called **Negro Island,** which at low water is connected with the former by a bare ledge. Its surface bears a scant growth of grass and affords subsistence to a few sheep.

Eight hundred yards to the westward of Negro Island is Stage Island, (before described,) which is rocky, about four hundred yards long, and entirely bare of trees. It lies **E NE.** and **W SW.**, and upon its northeastern end is built a grey stone monument, forty feet high and surmounted by a circular cap, and called **Stage Island Monument,**—the day-guide to Winter Harbor. The channel for vessels coming from the northward leads between Stage Island and Negro Island. There is a large dwelling-house and out-building on the southwestern end of Stage Island; and at this point a bar of shingle extends across to the shore of Fletcher's Neck,—joining it to the island at low water. **Stage Island.**

A quarter of a mile **W.** of Stage Island lies a small, round, grassy islet, called **Basket Island,** about a hundred and fifty yards in diameter, and joined at low water to the neck, from which it is distant a little over five hundred yards.

Two-thirds of a mile **N.** from the middle of Stage Island is another small island, called Ram Island, oval in shape, lying **E.** and **W.**, and about a hundred and fifty yards long. It is low, covered with grass and bushes, destitute of trees, and is surrounded by shoals. **Ram Island.**

Of the islands in Saco Bay, which do not properly form part of the approaches to Winter Harbor, may be mentioned Eagle, Stratten's and Bluff islands. The former lies three-quarters of a mile **N.** from Ram Island, and is an irregularly shaped islet about a hundred and fifty yards in diameter, and bare of trees with the single exception of a solitary tree near the centre, which is a prominent mark for vessels coming through the bay. Eagle Island lies about a mile **E.** from Ferry Beach and six miles and a quarter **W SW.** from Richmond's Island. **Eagle Island.**

Two miles and a half **E NE.** from Eagle Island, and one mile and a half **S.** by **W.** from Prout's Neck, lies **Stratten's Island,** the southernmost of two islets lying **NW.** and **SE.** from each other. It is of irregular shape, lies **NE.** and **SW.**, and is low and bare of trees and nearly half a mile long. A group of houses near the southwestern end are the only dwellings upon the island.

A quarter of a mile **NW.** from Stratten's Island is Bluff Island, lying nearly **NE.** and **SW.**, and about three hundred and fifty yards long. It is higher than Stratten's Island, and has a grove of spruce trees on its highest part, about the middle of the island. Ledges and sunken rocks extend off from Stratten's Island to the eastward half a mile; and there is no passage between the two islets. **Bluff Island.**

DANGERS

IN APPROACHING AND ENTERING WINTER HARBOR.

I. ***Coming from the Northward or Eastward.***—The course in from the northward leads directly for the church-steeple in Biddeford Pool; and when you are within a mile and a half of Wood Island there will be seen to the southwestward a red spar-buoy, and to the southward a black spar-buoy. The red buoy is on Ram Island Ledge, which has seven feet at mean low water, and lies **E.** by **S.** from Ram Island and **NE.** by **N.** from Stage Island Monument. The buoy (No. 6) is placed in five fathoms on the southeastern side of the ledge, and is half a mile **E.** by **S.** from Ram Island and two-thirds of a mile **NE.** by **N.** from Stage Island Monument; and from it the ledge extends due **W.** for a quarter of a mile. There is a good channel between its western end and Ram Island, but strangers must not attempt it. ***Ram Island Ledge.***

The black spar-buoy is on Negro Island Ledge, which lies nearly six hundred yards **N.** by **E.** from the western point of Wood Island and has nine feet water at ordinary tides. From Stage Island Monument it bears **E.** by **N.** about two-thirds of a mile, and from Wood Island Light-house **NW.** nearly half a mile distant. It is a round ledge of about a hundred and fifty yards diameter, and there is excellent water between it and ***Negro Island Ledge.***

the island. The buoy, which is marked No. 3, is placed in five fathoms on the northern side of the shoal, and vessels passing to the southward of the ledge must give the buoy a berth of an eighth of a mile (two hundred and fifty yards) to the northward.

Sharp's Rocks, a dangerous ledge, bare at half-tide, is an obstruction in the way of vessels bound into Saco River. It lies S. from Ram Island, a quarter of a mile off; E. by S. from the end of the breakwater, about seven hundred yards; and N. by W. ½ W. from Stage Island Monument, eight hundred yards distant. This ledge between the lines of three fathoms is a quarter of a mile long in an E. and W. direction, and two hundred and fifty yards wide in a N. and S. direction. A red spar-buoy (No. 8) is placed in twenty feet on the southern side of the rock, but must not be approached too closely, as the breakers extend quite up to it and in heavy weather beyond it.

Sharp's Rocks.

Shoals surrounding Ram Island. Ledges and sunken rocks render a close approach to Ram Island very dangerous, as E. of it there is a depth of twelve feet two hundred and fifty yards from the island, and bare ledges one hundred yards inshore of that. SE. and S. of it the shoals extend nearly over to Sharp's Rocks,—there being a rock with twelve feet three hundred and fifty yards to the southward of the island; and W. of it a ledge, bare at half-tide, is found at a distance of three hundred yards. This island should, therefore, never be closely approached by strangers.

After passing Sharp's Rocks a spar-buoy, painted black and white in perpendicular stripes, will be seen ahead about a quarter of a mile off. This is "Lower Bar Buoy," placed on the large sand-bar which obstructs the entrance to Saco River, and which is shifted after every heavy gale as the bar changes and shifts.

The mouth of Saco River is full of sand-bars and shoals, which are constantly shifting, so that no sailing directions can be given for the river. Strangers must take a pilot, who can always be found at the Pool if one does not board them outside. The proper course, with no pilot, is to anchor in Winter Harbor and obtain one before attempting to enter the river. The above mention of the dangers in the approaches to the river have been given merely for the sake of completeness in the descriptions.

Bound into Winter Harbor, after passing Negro Island Ledge look out for Stage Island Point, which is a long reef of rocks making out in an E. by N. direction from the eastern end of Stage Island nearly three hundred yards. For more than half of this distance it is bare at low water; and the sunken rocks outside of the bare reef are extremely dangerous to vessels bound in with a flood-tide, as the current of flood sets directly upon them and the point is not buoyed. Vessels must give the island a berth of not less than three hundred and fifty yards to the westward.

Stage Island Point.

When abreast of Stage Island Point a red spar-buoy will be seen on the eastern side of the channel, a quarter of a mile off. This is on Negro Island Bar, a long bar, composed mostly of shingle and mussel beds, which extends in a SW. by W. direction from Negro Island about three hundred yards, and is bare at extreme low tides throughout its entire length. The buoy, which is marked No. 4, is placed on its southwestern end, and must be left to the southward and eastward by vessels coming from the northward or northeastward, and to the northward by those using the passage between Wood Island and Fletcher's Neck.

Negro Island Bar.

The eastern shore of Stage Island must not be approached nearer than three hundred yards, in order to avoid the flats.

The whole of the northern shore of Fletcher's Neck is lined with rocks, most of which are bare at low water and some are out at half-tide. The most prominent are the Lobster Rocks, which lie off the shore opposite the village, and extend out to a distance of a quarter of a mile. There are a great many of them and nearly all are bare at low water. The most westerly rock, which is out at half-tide, is called **Half-Tide Rock**, and was formerly marked by a spindle, which is much needed by vessels going into the Pool, as it enabled them to avoid being set upon the rocks when they were covered. These rocks are the only dangers in the passage into the Pool.

Lobster Rocks.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING WINTER HARBOR.

I. ***Coming from the Northward or Eastward.***—From a point one mile and three-quarters S. from Cape Small Point, with Seguin Light-house bearing E NE., distant four miles, in thirteen fathoms water, steer W SW., keeping the latter on a bearing of E NE. This course carries not less than sixteen fathoms water and leads outside of all dangers. Continue it for sixteen miles, until the buoy on Hue and Cry Rocks is exactly in range with Cape Elizabeth East Light-house, bearing NW. ¼ N., distant one mile, when Wood Island Light-house will bear W. by S., ten miles distant. Now steer W. by S. for Wood Island Light-house, and when within two miles of it, with Stage Island Monument bearing W. ½ S., three miles distant, steer W., carrying not less than five fathoms, until you are past

Negro Island Ledge and Wood Island Light-house bears SE. ¼ E. The church-steeple in the Pool settlement will then bear SW. by S. ¼ S., and you will be in seven fathoms, hard bottom, and must steer that course, which will lead between Negro Island and Stage Island with not less than three fathoms water, leaving the former two hundred and fifty yards to the eastward and the latter six hundred yards to the westward. There is good anchorage anywhere between Stage Island and Negro Island Bar buoy for vessels of over twelve feet draught; but light-draught vessels may, when near this buoy, alter their course a little to the westward, steering exactly for the entrance to the Pool, and anchoring anywhere between Stage Island and the Lobster Rocks. *Sailing Directions---Winter Harbor.*

If bound into the Pool: When Wood Island Light-house bears SE. ¼ E. and Stage Island Monument SW. by W. ¾ W., steer SW., leaving Negro Island Bar buoy three hundred yards to the eastward and Half-Tide Rock one hundred and fifty yards to the southward. When abreast of the western point of the entrance to the Pool keep the middle of the passage, and anchor as soon as you are through. Eight feet at low water is the least found on the above courses; but the tidal current sets with considerable velocity directly through the passage. The course from the usual anchorage in Winter Harbor to the Pool is SW. ½ W. for the eastern point of entrance, and when you are within a hundred and fifty yards of the point keep the middle of the passage as before.

Coming alongshore from Cape Elizabeth.—When abreast of Watts' Ledge steer SW. by W. ¾ W., and you will soon see Stage Island Monument directly ahead. Continue the course for it until you are abreast of Negro Island Ledge buoy, and Wood Island Light-house bears SE. ¼ E., when steer SW. by S. ¼ S. for the church-spire and follow the directions previously given.

These courses pass six hundred yards to the eastward of Ram Island Ledge; three hundred and fifty yards to the westward of Negro Island Ledge; three hundred and fifty yards to the eastward of Stage Island Point; and one hundred yards to the westward of Negro Island Bar.

No sailing directions can be given for Saco River Entrance, as the bar frequently shifts, and it is necessary to take a pilot.

DANGERS

IN APPROACHING AND ENTERING WINTER HARBOR.

II. *By the passage between Wood Island and Fletcher's Neck.*—This is an excellent channel and but little obstructed, and there are two entrances,—one on the northern and the other on the western side of a bad sunken ledge, called Dansbury's or Danceberry's Reef. The first danger met with by vessels coming from the southward lies half a mile off the southern shore of the neck, and is called Hussey Rock, or *The Hussey*, which has seven feet at mean low water, and lies SW. by S. ¼ S., one mile and a half from Wood Island Light-house. A black spar-buoy, marked No. 1, is placed in thirty feet water on the southeastern side of the ledge, and you must give it a berth and leave it to the southward. *Hussey Rock.*

Seven hundred yards NE. by N. from The Hussey lies a small low island, called Sandy Island, nearly half a mile SW. by S. ¼ S. from the extreme eastern point of Fletcher's Neck,—Wood Island Light-house being exactly on with the point. It is surrounded by ledges and sunken rocks, and reefs extend NE. by N. from it three hundred yards; and there are many very dangerous ledges on its southern side all the way to The Hussey. *Sandy Island.*

Three hundred and fifty yards E. from Sandy Island is a sunken ledge, with three feet at low water, called The Whale's Back, which lies a mile S SW. from Wood Island Light-house and seven hundred yards S. ¼ W. from the eastern extremity of Fletcher's Neck. It is not buoyed, and at high water breaks but seldom except in heavy weather. Vessels should be careful in coming from the southward, when nearing Fletcher's Neck, not to go to the westward of Wood Island Light-house bearing N. by W., which bearing clears all of the dangers to the southward of the neck, but leads directly over Dansbury's Reef; so that vessels from the southward intending to enter Winter Harbor by the passage between this reef and Wood Island must not stand to the westward of Wood Island Light-house bearing NW. by N. *The Whale's Back.*

Washman's Rock, which is always bare, is nearly half a mile NE. by E. from Sandy Island; two-thirds of a mile S. by W. from Wood Island Light-house; and a quarter of a mile SE. by E. ¼ E. from the extremity of Fletcher's Neck. On its eastern side it is bold-to, but on the western side a line of reefs extends towards the point two hundred yards, and another line extends from the point towards the rock a little over two hundred yards, thus leaving a slue or very narrow passage with over three fathoms at low water between the two reefs. This passage is not available, however, on account of its contracted limits, as it is very crooked and not over fifty feet wide. Washman's Rock is not buoyed, as it always shows itself by breakers. *Washman's Rock.*

The western passage from the southward into Winter Harbor leads between Washman's Rock and a red spar-buoy a quarter of a mile to the westward of it. This is on Dansbury's Reef, or *Danceberry's Reef*, (as it is sometimes spelled,) which lies N. and S., and is three hundred and fifty yards long. The shoalest spot upon it bears S. by E. from Wood Island Light-house, half a mile distant; E. ¼ N. from the extreme eastern point of Fletcher's Neck, eight hundred yards distant; and SE. by E. ¼ E. from Stage Island Monument,—seen over Gooseberry Island. Spots of five, seven, nine, and ten feet at mean low water are found upon this ledge. The buoy, which is marked No. 2, is placed in five fathoms water about twenty yards to the southward of the ledge. It is incorrectly buoyed, as the best channel is between the ledge and Wood Island; and a buoy, painted red and black in horizontal stripes, has, therefore, been recommended to be placed on each end of this reef.

Dansbury's Reef.

Gooseberry Island is the mass of rock, three hundred and fifty yards long by one hundred and fifty wide, which lies three hundred and fifty yards N. from the eastern end of Fletcher's Neck and four hundred yards to the southward of the western end of Wood Island, and at low water is connected with the neck. Its northeastern end is tolerably bold-to, and the channel into Winter Harbor leads between it and Wood Island.

Gooseberry Island.

The range of Stage Island Monument over the middle of Gooseberry Island is the mark for the shoal of Dansbury's Reef.

The shore of Fletcher's Neck, after passing Gooseberry Island, must not be approached closer than an eighth of a mile, (two hundred and fifty yards,) to avoid *several half-tide rocks* which lie along the shore at distances varying from fifty to one hundred and fifty yards from high-water mark.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING WINTER HARBOR.

II. ***By the passage between Wood Island and Fletcher's Neck.***—Bring Wood Island Light-house to bear NW. by W. ¾ W. and Stage Island Monument W. by N. ½ N., when there will be about twelve fathoms water, and you must steer W. by N. ⅛ N., having the western end of Stage Island a little to the northward of the course. This course leads four hundred yards to the northward of Dansbury's Reef, one hundred and fifty yards to the northward of Gooseberry Island, leaves Negro Island Bar buoy seventy-five yards to the northward, and carries not less than thirteen feet at low water. When past this buoy, steer NW. ½ W. for Stage Island Monument, and anchor at pleasure; or you may continue the W. by N. ⅛ N. course, and anchor according to draught; or, *if bound into the Pool*, steer SW. by W. ¾ W. from the buoy, leaving Half-Tide Rock seventy-five yards to the southward. When the entrance is fairly open, keep in the middle of the passage as previously directed.

III. ***Coming from the Southward, to enter by the passage to the northward of Dansbury's Reef.***—On the course NE. by N. ¼ N. from Cape Ann, when Boon Island Light-house bears W., steer N. by E. until Wood Island Light-house bears NW. by N., when steer for it until you are within eight hundred yards, with about eight fathoms water, and the house on Stage Island bears W. by N. ¾ N. Now steer that course until you are up with Negro Island Bar buoy, and have about thirteen feet water, when haul up for Stage Island Monument and anchor as before; or, *if bound into the Pool*, steer SW. by W. ¾ W., as above directed.

On the course NE. ¼ N. along shore, inside of the Isles of Shoals and Boon Island, continue until Wood Island Light-house bears NW. by N., when steer for it as before, and follow the directions just given.

IV. ***Coming from the Southward, to enter by the western passage, between Dansbury's Reef and Washman's Rock.***—Continue the course N. by E. from off Boon Island until Wood Island Light-house bears N. by W. ½ W. and you are in twenty-two fathoms water, when steer N NW., which course will lead directly for the house on the southern shore of Wood Island and will carry not less than six fathoms water. Continue this course until within two hundred yards of the shore and Stage Island Monument bears W NW., when steer W. by N. ⅛ N., and follow the directions given above.

(The house on the southern shore of Wood Island is a frame building of a grey color. It stands on the shore a little more than half way from the light-house to the western end of the island, and cannot be mistaken, as it is the only house besides the light-keeper's on this shore.)

PLATE No 1497

COAST
FROM CAPE ELIZABETH TO WELLS
MAINE

Scale: Between

1870

SOUNDINGS

Soundings in Fathoms at lower low water
Depths less than 3 Fathoms in red on a shaded surface

BUOYS

Red Buoys to be left in entering on Starboard hand
Black " " Port " "
Black and Red horizontal stripes Danger Buoy

CAPE ELIZABETH LIGHTS

WOOD ISLAND LIGHT

GOAT ISLAND LIGHT

Cape Porpoise

Kennebunk R.

Five Fathom Bank

Nautical Miles

V. ***Coming from the Southward, alongshore, to enter by the western passage.*** *Sailing Directions—Winter Harbor.* On a course **NE.** ¼ **N.** for Cape Elizabeth, when Wood Island Light-house bears **N.** by **W.** ½ **W.**, steer **N NW.**, with not less than six fathoms, until you are within two hundred yards of the shore and have the Monument bearing **W NW.**, when steer **W.** by **N.** ⅛ **N.**, and follow the directions previously given. These courses lead between Dansbury's Reef and Washman's Rock,—passing two hundred and fifty yards to the westward of the former and two hundred yards to the eastward of the latter.

LIGHT-HOUSE.

Name.	Latitude.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		m. s.	Feet.	
Wood Island Light-house	**43 27 23**	**70 19 45**	**4 41 19.1**	Revolv'g red.	**1 0**	**62**	**13**

TIDES.

	Saco Ferry.	Winter Harbor.
Corrected Establishment	**11h 6m**	**10h 52m**
Mean Rise and Fall of tides	8.2 ft.	10.5 ft.
Mean Rise and Fall of Spring tides	———	11.7 ft.
Mean Rise and Fall of Neap tides	———	9.3 ft.

VARIATION OF THE COMPASS.

The magnetic variation for 1879 is **12° 52′ W.**, with an annual increase of about **3′**.

LIFE-SAVING STATION.

The United States Government has established on Fletcher's Neck, near Biddeford Pool, a life-saving station, which is fully equipped with all the apparatus necessary for the relief of those who may be shipwrecked.

COAST FROM FLETCHER'S NECK TO CAPE PORPOISE.

From Holman's Point the shore takes a general course **SW.** ¼ **W.** for six miles to Cape Porpoise, under which is the first harbor met with to the southward of Winter Harbor. The shore-line is much indented by coves and inlets, and several islands lie close in with the mainland. Hoyt's Neck, which is the first point of land to the southward of Fletcher's Neck, is low and grassy, about twenty feet high and bare of trees, and lies **SW.** by **W.** from Holman's Point, three miles distant. The shores between these two points are low and bare,—being mainly formed by the narrow strip of beach separating Biddeford Pool from the sea. Near the neck, however, wooded lands show over the shores, which do not in any case rise higher than twenty feet above sea-level. **Hoyt's Neck.**

A little over half a mile below Hoyt's Neck is Curtis' Cove, a small, nearly circular cove with tolerably good water, but of no importance. Its northern shores, formed by the neck of land which separates it from the small cove under Hoyt's Neck, are wooded with a variety of trees; and the southern shores are bare of trees except a grove of spruce near the southern end. **Curtis' Cove.**

Curtis' Cove is separated from Little River by a neck of land, partly cleared and partly wooded, called Cleave's Neck. This land is low, and as stated above is mostly cleared; but a grove of trees, mostly spruce, occupies its southern face. Several houses are seen near its northern end on the southern shore of Curtis' Cove, and another house near the extreme southern point of the mouth of Little River. **Cleave's Neck.**

Little River empties into the northeastern part of Goose Fair Bay two miles and three-quarters to the northward of Cape Porpoise and four miles to the southward of Fletcher's Neck. It is a narrow and shallow stream, about fifty yards wide at its mouth, but widening to over one hundred yards a short distance above. Its general course is about **N NE.** between marshy banks, and it is of no importance. **Little River.**

Two hundred and fifty yards to the southward of Cleave's Neck, with which it is connected at low water, lies a low islet with one small grove of spruce upon it. This is **Timber Island**, lying **N.** and **S.**, oval in shape, and a quarter of a mile long. It is surrounded by ledges, and is connected at low water with Cleave's Neck by a narrow ledge and a bar of bare shingle. This island forms the northeastern boundary of Goose Fair Bay, an indentation in the shore extending from Timber Island to Goose Fair Creek, a mile and a half to the southward, and of little importance. Its shores are low,—the northern part wooded, the southern half grassy and backed by woods. The wooded land back of the shore-line is from forty to sixty feet high, and occasional houses are seen along the shore. **Goose Fair Bay.**

Two large bare ledges occupy the middle of Goose Fair Bay,—the easternmost one, which is six hundred yards from shore and the same distance from Timber Island, being called **Eastern Goose Rock.** The western one is called **Western Goose Rock**, and lies six hundred yards **SW.** from the eastern rock and the same distance from the shore, with which it is connected at low water. **Goose Rocks.**

Goose Fair Creek, which empties into the sea at the southern end of this bay, is a narrow and crooked streamlet, which takes its rise in the high country back of the coast and flows through marshy land to the sea. It is very shallow and of no commercial importance. A mile and a half **S. ¼ E.** from the mouth of this creek is Cape Porpoise, which is the eastern point of a barren rocky islet, called **Cape Island**, and is six miles and three-quarters **SW. ¼ W.** from Wood Island Light-house; fifteen miles and a half **SW. ¼ W.** from Cape Elizabeth; thirty-two and a half miles **SW.** by **W. ½ W.** from Cape Small Point; and thirty-five and a half miles **W SW.** from Seguin. From Boon Island Light-house it bears **N NE.**, fourteen miles distant. This cape, the first to the southward of Cape Elizabeth, is in

Cape Porpoise.

Latitude.....43° 21′ 43″ N.
Longitude.....70° 24′ 38″ W.;

and on its northern side is situated Stage Island Harbor, and on its southern side is the entrance to Cape Porpoise Harbor.

STAGE ISLAND HARBOR.

This harbor, together with Cape Porpoise Harbor, both of which afford good shelter in northerly winds, is formed by a group of islands and islets lying along the mainland, most of them to the westward of the cape. Between and among these islands wind various channels, which give excellent anchorage for light-draught vessels and tolerably good shelter even for vessels drawing from twelve to eighteen feet. The main shore-line is much cut up by long coves, which increase the size of the two harbors; but these coves are, however, all bare at low water.

The most northerly of the group of islands mentioned above is called Stage Island, and forms part of the northern boundary of Stage Island Harbor. It is a mile and three-quarters **SW.** from Timber Island and six miles **SW. ½ W.** from Holman's Point, is of irregular shape, lies **NW.** and **SE.**, and is about six hundred and fifty yards long. Its western end is three hundred and fifty yards from the mainland, and its southeastern point is connected at low water by a reef of rocks with a small, low, rocky islet, called **Little Stage Island**. Stage Island is about twenty feet high, and entirely bare of all vegetation except some small bushes and grass. On its northern side there is no passage except at high water; but the entrance to Stage Island Harbor is on its southern side, between Little Stage Island and Cape Island.

Stage Island.

Cape Island, which is merely a mass of rock covered with a very scant growth of moss and grass, is triangular in shape and three hundred and fifty yards long. It is four hundred yards **S.** from Little Stage Island and six miles and three-quarters **SW. ¼ W.** from Wood Island Light-house, and at low water a reef of rocks connects it with Trott's Island, two hundred yards to the westward. The eastern extremity of Cape Island is called Cape Porpoise, as above mentioned.

Cape Island.

Trott's Island. Trott's Island, the largest of the islands in this vicinity, lies two hundred yards to the westward of Cape Island and six hundred and fifty yards to the southwestward of Stage Island, and forms the western shore of Stage Island Harbor. It extends **N.** and **S.**, is about half a mile long, and its greatest width is three hundred and fifty yards. The northern end is about thirty feet high and bare of trees, but from the centre of the island nearly to its southern point there is a dense growth of low fir with a few spruce trees.

At low water Trott's Island is connected on the east with Cape Island, on the south with Goat Island, (on the northern side of the entrance to Cape Porpoise Harbor,) and on the north with Redding's Island. This is a small, low, grassy islet, about two hundred yards in diameter, which lies nearly two hundred yards to the northward of Trott's Island and three hundred yards **W SW.** from the western point of Stage Island. It is two hundred yards from the mainland, with which it is connected at low water, as well as with **Bickford's Island**, two hundred and fifty yards **W.** by **S.** from it.

Redding's Island.

Stage, Cape, Trott's and Redding's islands form the boundaries of Stage Island Harbor, which affords a narrow but comfortable anchorage, with four fathoms at low water, in all winds except easterly gales.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING STAGE ISLAND HARBOR.

I. ***Coming from the Northeastward.***—There are no dangers in the approaches to this harbor, and the following courses, *if made good*, will lead safely in; but this anchorage is not recommended. *To enter it from the northward and eastward,* steer **SW. ¼ W.** from Cape Elizabeth until the middle of Stage Island bears **W.** and the middle of Cape Island **W.** by **S. ¼ S.**, with twenty-three fathoms water; when steer **W. ¾ S.** about for the middle of Trott's Island. On this course the least water is four and three-quarter fathoms. In passing between Little Stage Island and Cape Island keep about midway between the two at high water, but at low water hug the low-water line on the Stage Island side. As soon as you have passed between these two islands haul to the northward behind Little Stage Island, or to the southward behind Cape Island, according to which side offers the best shelter. From six to eighteen feet at low water may be found in this harbor, but it is unfit for strangers, and necessity only should compel such to attempt it.

II. ***Coming from the Southward.***—A vessel bound to the eastward, and wishing, on the approach of night or heavy weather, to anchor in Stage Island Harbor, must, when on her course **NE. ¼ N.** Cape Porpoise Light-house bears **N.** by **W. ½ W.**, steer **N. ⅜ E.** for Timber Island, carrying not less than twenty fathoms water, until the middle of Cape Island bears **W.** by **S. ¼ S.** and Wood Island Light-house bears **NE. ¼ N.**, with nineteen fathoms. Then steer **W. ⅜ S.**, which will lead, clear of danger, about midway between Little Stage Island and Cape Island, in four and a half fathoms water; after which follow the directions given above. ***Sailing Directions---Stage Island Harbor.***

CAPE PORPOISE HARBOR.

This harbor of refuge, before mentioned, is bounded by the mainland and Negro and Bickford's islands on the north; Trott's Island on the east; Goat, Folly and Green islands on the south; and Bass Island and the mainland on the west. Thus is formed an inlet of very irregular shape, with a narrow and difficult channel and a very contracted anchorage,—most of the harbor being dry at low water.

Though with such disadvantages, Cape Porpoise Harbor is of great importance to vessels of light draught when caught out in heavy or threatening weather, as the holding-ground is good, and should there be doubts of the tackling holding out in a very heavy gale you may safely slip and run upon the flats. These are of soft mud and sand, and a vessel can lie aground upon them with entire safety. The anchorage is so contracted that in the fishing season it is almost impossible to get a berth, as the fishermen have their moorings, which occupy almost all of the channel, and coasters or other strangers coming in must anchor so close to each other that fouling is the almost inevitable result.

Goat Island, forming the northern point of entrance to the harbor, lies two hundred and fifty yards **SW.** from the southern end of Trott's Island, (before described on page 492,) with which it is connected at low water. It is barren and rocky, lies **E.** and **W.**, is about two hundred yards long, and there is no vegetation except a little grass. On this island, at its southwestern end, is built the light-house known as Goat Island Light-house, or **Cape Porpoise Light-house**, a white stone tower twenty-five feet high, showing a fixed white light, of the sixth order of Fresnel, from a height of thirty-eight feet above sea-level. The keeper's dwelling is about one hundred and fifty feet to the northward of the tower, and is connected with the latter by a wooden covered walk,—both house and walk being painted white. This light is visible eleven miles in ordinary weather; and its geographical position is **Goat Island and Light-house.**

Latitude ..... **43° 21′ 27″ N.**
Longitude ..... **70° 25′ 31″ W.**

Goat Island Light-house is the guide to Cape Porpoise Harbor, and bears from

	Miles.
Wood Island Light-house, SW. ¼ W.	7½
Cape Elizabeth, SW. ¼ W.	16
Cape Small Point, SW. by W. ½ W.	33
Seguin Light-house, W SW.	36
Boon Island Light-house, N NE.	14½
White Island Light-house, (Isles of Shoals,) NE. by N.	25

Three hundred and fifty yards **W SW.** from Goat Island is an islet formed entirely of sand, pebbles and loose stones, and destitute of grass or trees. It lies nearly **N.** and **S.**, is about two hundred yards long, and is known as Folly Island. The entrance to the harbor is between it and Goat Island; but the passage is so contracted by the rocks which extend off from both islands as to make it somewhat difficult of approach. Long reefs extend from the southern end of Folly Island **S.** by **W.** seven hundred yards, and for half that distance are bare at low water; and heavy breakers are almost constant upon this point, which is known as **Folly Island Point.** **Folly Island.**

A little over two hundred yards **W.** from Folly Island is Green Island, a low islet, composed of sand and pebbles, and about two hundred and fifty yards long. It lies **N.** and **S.**, and is surrounded by ledges. There are half a dozen spruce trees near its southern end and a group of fir in the centre; but the rest of the island is bare. There is a passage for light-draught vessels into the harbor between this island and Folly Island at high water; but it is so narrow and obstructed by rocks as to render it highly dangerous for strangers. **Green Island.**

Two hundred and fifty yards **E.** from Green Island is a low sandy island, about three hundred yards long, called Bass Island, which has a single spruce tree upon it, but is otherwise bare. At low water the passage between it and Green Island is contracted to about thirty yards, and at extreme low tides the two islets are joined by a sand-bar. This island and Green Island form the western boundaries of Cape Porpoise Harbor. **Bass Island.**

Vaughan's Island lies close in with the mainland of Kennebunk, from which it is separated by a passage about fifty yards wide leading into Turburn's Creek. It is triangular in shape, about a third of a mile long in an **E.** and **W.** direction, and its southern point is a quarter of a mile **W.** from Green Island. A reef extends from this point **S.** by **W.** half a mile, and for nearly six hundred yards of this distance is bare. Heavy breakers are constant on this point, which is called **Vaughan's Island Point.** There is a channel for light-draught vessels at high water between Green and Vaughan's Islands, but it is not safe for strangers. Vaughan's Island is low, and bare except for one or two trees near its southern end and a small grove on the extreme western end, near the shore of Turburn's Creek. **Vaughan's Island.**

Bickford's Island. Bickford's Island is situated at the northern extremity of Cape Porpoise Harbor, and is connected with the mainland by a causeway eighty yards long. It is oval, lies N. and S., is two hundred and fifty yards long, about twenty feet high, bare of trees, and has upon its summit a group of houses. There is a large fish-house near the southern end and several wharves on the southwestern end of the island.

Negro Island. About one hundred yards SW. from Bickford's is a low bare islet, one hundred and fifty yards long, called Negro Island. It lies one hundred and fifty yards from the main shore, exactly opposite the mouth of the long narrow cove leading up to the settlement, and forms, with Bickford's Island, the northern boundary of the harbor proper.

Trott's Island, lying on the northern side of the harbor, after passing Goat Island, has been already described under Stage Island Harbor.

The mainland, forming the western side of both Stage Island and Cape Porpoise harbors, is, as before remarked, much cut up by coves and other indentations. The first of these, called Sampson's Cove, may be said to lie in the

Sampson's Cove. first-named harbor, and opens into the land about two-thirds of a mile to the southward of Goose Fair Creek and W NW. from Stage Island. It has an average width of two hundred yards, and terminates at the back of the village; but is entirely dry at low water, and fast filling up with salt-meadow.

One-third of a mile to the southward of Sampson's Cove is the second indentation,—a long narrow cove running in a northerly direction for a third of a mile with an average width of two hundred yards. The village or settle-

Porpoise Cove. ment of **Cape Porpoise** is built upon the banks and at the head of this cove, which is called Porpoise Cove. The neck of land which separates this from Sampson's Cove to the northward is thirty feet high, cleared and occupied by a part of the village; and a grove of trees will be seen near its northern end. A very conspicuous house, (with a chimney at each gable,) called **Stone's House,** is situated on the southern end of the neck, and is a good landmark.

A long narrow neck of land, cleared and settled, separates Porpoise Cove from another, called Ellison's

Ellison's Creek. Creek, which makes in to the northward about a third of a mile with an average width of one hundred and fifty yards. It is bare at low water, and its western shores are about twenty feet high and mostly cleared; but there are a few scattered trees.

Three-quarters of a mile SW. from the mouth of Ellison's Creek, and on the western side of Vaughan's Island, makes in Turburn's Creek, which, like the others, is of little importance. It runs nearly N. and S. for about half

Turburn's Creek. a mile, but is narrow, crooked and nearly all bare at low water. Its shores are higher than those to the eastward,—being in some places sixty feet high; but they are nearly all cleared, and have only occasional groves of spruce, pine, oak and other trees.

DANGERS

IN APPROACHING AND ENTERING CAPE PORPOISE HARBOR.

I. ***Coming from the Northward and Eastward.***—Vessels coming from the northward and eastward must be careful to avoid Folly Island Point, which makes off to the southward

Folly Island Point. from Folly Island to a distance of over a third of a mile. This is a most dangerous ledge, and vessels beating in or out must be careful not to approach it too closely, as it is rarely that the sea does not break upon it in two fathoms. The current of flood also sets strongly upon it, and it is not buoyed.

The Old Prince lies on the eastern side of the entrance, has five feet at mean low water and three at the lowest spring tides, extends N. and S., and is a little over two hundred yards long. The shoalest

The Old Prince. part of this ledge bears SE. ½ S. from Goat Island Light-house, distant nearly four hundred yards, and SW. ½ W. from the southern point of Cape Island, distant three-eighths of a mile, (eight hundred yards.) A red spar-buoy, marked No. 2, is placed in five fathoms water on the southwestern end of this ledge, about one hundred yards S. from the shoalest part.

Two hundred yards E. from the southern end of Folly Island is *a shoal spot with thirteen feet at mean low water.* To avoid this and the other shoals and rocks to the eastward of Folly Island vessels must, after passing The Old Prince buoy, steer nearly for the red buoy on Goat Island Point, and must be careful not to bring this buoy and the beacon on Beacon Ledge in range, but to keep them well open until they are almost up with the buoy.

Goat Island Point is a ledge of rocks bare at half-tide, which extends off W SW. from the southwestern point of Goat Island to a distance of one hundred and fifty yards. A red

Goat Island Point. spar-buoy (No. 4) is placed on its western point, which is extremely bold-to. The buoy is not two yards from the bare rocks at low water, but is in four fathoms water, and may be passed close-to by leaving it to the eastward.

After passing Goat Island Point the channel becomes extremely narrow,—running between dry flats and ledges in the direction of Bickford's Island. To keep in the deepest water

Beacon Ledge. it is necessary to give the beacon on Beacon Ledge a berth to the eastward of a hundred and fifty yards. This latter is a large ledge, always out; and the beacon, which

is known as the **Pilot's Beacon**, consists of a rude pile of stones surmounted by a pole,—the whole having been erected on the dry ledge by the fishermen for their own convenience.

Gangway Rock, which is marked by a black spar-buoy (No. 3) placed on its northeastern side in fifteen feet, lies on the southern side of the channel, about half a mile to the westward of Goat Island Light-house, and has six feet at low tides. The channel to the southwestward of the buoy is not safe. ***Gangway Rock.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING CAPE PORPOISE HARBOR.

I. ***Coming alongshore from the Northeastward.***—Steer **SW. ¼ W.** from Cape Elizabeth (carrying not less than ten fathoms and passing a mile and a half outside of Wood Island in about twenty-five fathoms) until Goat Island Light-house bears **NW.** by **N. ⅛ N.**, a mile and a half distant, with twenty-four fathoms, when steer **NW. ¾ N.**, leaving the red buoy on The Old Prince seventy-five yards to the eastward, Folly Island Point two hundred and fifty yards to the westward, and Goat Island Point buoy close-to to the eastward, and carrying not less than five fathoms up to the latter. When past this buoy and the light-house, and the latter bears **E.** by **S. ½ S.**, with thirteen feet, soft bottom, steer **N. ¼ W.** for Stone's House, and anchor abreast of the Pilot's Beacon, or when it bears **E.** by **S.** The best water at this anchorage is fifteen feet at mean low water, but is confined to a very narrow slue. *Or, if the weather be mild*, round Goat Island Point buoy and steer for the beacon, and anchor with the light bearing **E.** by **S. ½ S.** In very heavy weather it is best to run upon the flats, where you may lie aground at half-tide, soft muddy bottom.

II. ***Coming from Seaward.***—Bring Wood Island Light-house to bear **N.** by **W.**, six miles distant, and Goat Island Light-house **W.** by **N. ⅛ N.**, distant seven miles, with forty fathoms water, and steer **W. ¼ N.**, carrying not less than twenty-four fathoms, until Wood Island Light-house is on with the eastern point of Fletcher's Neck (day-time) and Goat Island Light-house bears **NW.** by **N. ⅛ N.**, when there will be twenty-four fathoms, and Wood Island Light-house will bear **NE. ¾ N.** Now steer **NW. ¾ N.**, carrying not less than five fathoms, and follow the directions previously given.

DANGERS

IN APPROACHING AND ENTERING CAPE PORPOISE HARBOR.

II. ***Coming from the Southwestward, alongshore.***—**Bumpkin Island**, a low rocky islet, which lies a little over half a mile **SW.** from Vaughan's Island, is surrounded by ledges and sunken rocks. A long reef makes off from its southern end in a southwesterly direction for three hundred and fifty yards, and is called *Bumpkin Island Southwest Ledge*. It is a very dangerous reef, but many of its rocks are bare at low water and so indicate its presence at all times of tide. It is not buoyed, and a vessel to avoid it must not approach the island from the southward nearer than a third of a mile, or seven hundred yards. *Bumpkin Island Eastern Ledge* extends off from Bumpkin Island due **E.** for three hundred yards, and has on its extremity a rock bare at half-tide, which serves to mark the eastern boundary of the ledge, which would otherwise require a buoy. Vessels must, in tacking to windward, always give Bumpkin Island a good berth to avoid this reef. ***Bumpkin Island Ledges.***

Southward from the end of Vaughan's Island a long line of rocks extends for half a mile. For six hundred yards of this distance the reef is bare at low water, and two feet at mean low water is found seven hundred yards (or one-third of a mile) from the island. This reef is known as Vaughan's Island Point, and heavy breakers constantly roll in upon it, even in the smoothest weather. It is not buoyed, and must be carefully avoided by vessels coming from the southward, as it is almost directly in the way. ***Vaughan's Island Point.***

From the southern end of Folly Island a long point extends **S.** by **W.** for a third of a mile, and is known as Folly Island Point. Between five and six hundred yards from the island, on the line of this ledge, there is a depth of but four feet, and, as the rocks are steep, it is rarely that it does not break in two fathoms off the ledge. This is a very dangerous ledge, especially to vessels falling in with the land to the southward of Cape Porpoise, and great care should be taken not to get to the westward of Goat Island Light-house bearing **N. ¾ W.** This bearing leads clear of all dangers on the western side of the channel. ***Folly Island Point.***

The Old Prince (see page 494) lies on the eastern side of the entrance, has three feet at extreme low tides, extends **N.** and **S.**, and is two hundred yards long between the lines of three fathoms. The shoal of the ledge bears **SE. ½ S.** from Goat Island Light-house, distant four hundred yards, and **SW. ½ W.** from the southern point of Cape Island, dis- ***The Old Prince.***

tant three-eighths of a mile, (eight hundred yards.) A red spar-buoy (No. 2) is placed on the southwestern point of this ledge one hundred yards S. from the shoalest part.

Two hundred yards E. from the southern end of Folly Island is *a shoal spot with thirteen feet at mean low water.* Vessels must be careful to avoid this spot by steering for Goat Island Point buoy after passing The Old Prince buoy.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING CAPE PORPOISE HARBOR.

III. ***Coming from the Southwestward, alongshore.***—The course alongshore from the southward, inside of Boon Island and outside of York Ledge, is NE. ¼ N. On this course bring Goat Island Light-house to bear N. by W. ½ W., three miles and a half off, and Wood Island Light-house NE. by N. ½ N., nine miles off, when there will be twenty-four fathoms, gravel and fine sand. Now steer for Goat Island Light-house, carrying not less than seven and a half fathoms, and when past The Old Prince buoy steer NW. ¾ N. and follow the directions given on page 495.

LIGHT-HOUSE.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Goat Island Light-house	43 21 27	70 25 31	4 41 42.1	Fixed.	38	11

TIDES.

Corrected Establishment	11h 31m
Mean Rise and Fall of tides	6.0 ft.

(The above are approximate only.)

CURRENTS.

The current of flood sets in a nearly N. direction through the main channel into this harbor, and vessels must take care that, with a light wind and strong flood, they are not set upon The Old Prince or Goat Island Point. Vessels coming from the southward and westward must also beware of Folly Island Point, upon which the current of flood sets strongly.

The ebb-tide sets over towards the Folly Island shore, and vessels bound in or out must hug the eastern side of the channel to avoid the shallows on the western side. At half-ebb the current runs with considerable velocity, especially in the narrow passage between Goat Island Point buoy and the rocks to the eastward of Folly Island; but vessels should not attempt to go out of the harbor with a head tide unless the wind should be fair and at least a moderate breeze. Light-draught fishermen sometimes manage with the aid of sweeps to keep off the rocks when going out under such circumstances, but no stranger should risk it.

The above general remarks are the results of casual observations made during a few days' sojourn in the harbor in the autumn of 1878.

KENNEBUNK RIVER

and **Kennebunk Port** lie two miles and three-quarters W. by S. from Cape Porpoise and two miles and a quarter W. from Goat Island Light-house. The harbor is a good place of refuge for light-draught vessels, but is unfit for strangers on account of its narrow entrance and the dangers which obstruct it. The river is one hundred yards wide at its mouth, where two piers have been built for the improvement of the channel. On the eastern pier (which is nearly two hundred yards long) there formerly stood a light-house, but this was carried away in a gale in 1869. The absence of the light-house renders it unsafe in the highest degree to attempt to enter this harbor at night, as the dangerous **Fishing Rocks** lie directly in the way.

From Vaughan's Island (on the southern side of the entrance to Cape Porpoise Harbor) the course of the shore-line is WSW. for a mile and a half to Kennebunk Point, the eastern point of entrance to Kennebunk River. The

Bumpkin Island. land is of moderate height and mostly cleared near the shore-line, but the back country is wooded; and there are also groves of trees here and there along the shore. Three hundred and fifty yards from the shore, and about two-thirds of a mile SW. from Vaughan's Island, is Bumpkin Island, low, bare and rocky, lying N. and S., and about a hundred yards long. It is surrounded by rocks and sunken reefs, and there is no passage inshore of it except for boats in calm weather.

Kennebunk Point. Kennebunk Point (which is one mile W. by S. from Bumpkin Island) is forty feet high and mostly cleared, but there are groves of trees, and some scattered trees here and there on its summit. The Kennebunk River empties into the ocean on the western side of this point.

The general course of Kennebunk River from its mouth to the town is about N., and the distance nearly two-thirds of a mile; but at the upper end of the town a bridge closes navigation. Settlements occupy both banks of the river, but the town is situated on the eastern bank; and about the middle of the wharf-line two long piers extend more than half-way across the river. There is a custom-house here, as this is the port of entry for Cape Porpoise and vicinity.

DANGERS

IN APPROACHING AND ENTERING KENNEBUNK RIVER.

I. ***Coming from the Eastward.***—The first dangers encountered by a vessel coming from the eastward, and falling in with the land to the westward of Cape Porpoise, are the ledges making off from Bumpkin Island, of which there are two. *Bumpkin Island Eastern Ledge* extends off from the island due **E.** for three hundred yards, and has on its extreme eastern point a rock, bare at half-tide, which serves as a buoy or guide to shew the extent of the ledge. *Bumpkin Island Southwest Ledge* extends to the southwestward from the southern end of the island three hundred and fifty yards. It is a very dangerous reef, and vessels to avoid it must not approach the island from the southward nearer than seven hundred yards, or a third of a mile. (See page 495.)

Bumpkin Island Ledges.

Little Fishing Rocks, or *Lord's Rocks,* as they are often called, lie half a mile **S.** by **W.** from the **Light-house Pier,** have two and a half feet at mean low water, and are marked by a black spar-buoy (No. 3) placed in four fathoms water **SE.** from the rocks. From the spindle on Fishing Rocks this buoy bears **E.,** two hundred yards distant.

Little Fishing Rocks.

The Fishing Rocks are very dangerous ledges, lying **S.** by **W.** ¼ **W.** from the Light-house Pier, distant nearly two-thirds of a mile, (twelve hundred yards.) Upon a rock near their eastern end, which is bare at half-tide, is placed an iron spindle with cage on top; and from this spindle sunken ledges extend to the westward two hundred yards.

Fishing Rocks.

Half a mile **SE.** from the spindle on Fishing Rocks lies a very dangerous sunken ledge with seven feet at mean low water. It is called *Mile Rock,* and is marked by a black spar-buoy (No. 1) placed in thirty feet water off its southern edge. Vessels should carefully watch the bearings of the pier and spindle to avoid the ledge.

Of course, at night-time it is hazardous in the extreme to approach Kennebunk Port, even for those well acquainted with the dangers; but were the light re-established there would be no trouble. If a vessel should be close in to Kennebunk Point so as to be sure that Little Fishing Rocks did not bear anything to the northward of **W.** by **N.,** she might safely enter the river by keeping close to the point while rounding it, and anchor when near enough to the pier to obtain shelter; but with a southerly breeze she must run up the river.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING KENNEBUNK RIVER.

I. ***Coming from the Eastward.***—In approaching this harbor from the eastward care must be taken not to shut Goat Island Light-house in behind Green Island, but to keep the light visible on a bearing of **NE.** by **E.** until off Kennebunk Point, with the Light-house Pier bearing **N.** and you are in about ten fathoms, hard bottom. Now run for the pier until Cape Porpoise Light-house is shut in behind Kennebunk Point; when you will be in about four fathoms, abreast of Fishing Rocks, and must watch carefully the bearing of the piers, keeping close to Kennebunk Point. *If bound up the river,* run in midway between the piers, after which no sailing directions can be given. A pilot can always be obtained at the mouth of the river.

With westerly winds, or **NE.** winds, this anchorage is unsafe, owing to the heavy undertow, and in such cases vessels must run for Portsmouth; but with the wind anywhere from **NW.** to **N.** there is comfortable shelter. Eleven feet at high water and three feet at mean low water is the best that can be taken into Kennebunk River.

DANGERS

IN APPROACHING AND ENTERING KENNEBUNK RIVER.

II. ***Coming from the Westward.***—Vessels coming from the westward must not attempt to pass inside of the Fishing Rocks, as, although there exists a channel to the westward, it is not safe, and it is much better to use the channel between those rocks and Kennebunk Point. Fishermen and others who are familiar with the approaches to this harbor do sometimes use the western channel, and if the sea is smooth they can do this without much difficulty in the day-time, but at night no one dare use this passage.

In approaching by the usual channel vessels must pass between Mile Rock and Little Fishing Rocks, dangers already described above. After passing these the eastern channel is entered, and you must follow the directions given for that passage.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING KENNEBUNK RIVER.

II. ***Coming from the Westward.***—Bring Boon Island Light-house to bear **S.** by **W.**, and steer **N.** by **E.** until within one mile of the Light-house Pier, and you are in three and a half fathoms, hard bottom. Cape Porpoise Light-house will now bear **NE.** by **E.** ½ **E.**, and you must steer **NE.** ¼ **N.** for Kennebunk Point, carrying not less than five fathoms, until the Light-house Pier bears **N.**, with six fathoms. You will now be about eight hundred yards **S.** from the point and between five and six hundred yards **E SE.** from the spindle on Fishing Rocks, and must steer **N.** for the piers, following the directions previously given.

These courses pass a quarter of a mile to the eastward of Fishing Rocks; between five and six hundred yards to the northwestward of Mile Rock; and three hundred and fifty yards to the eastward of Little Fishing Rocks buoy.

It is of vital importance to a vessel approaching this harbor in the evening, or after night-fall, to save the tide, as the loss of it would involve serious delay, which, in case of bad weather coming up, might prove very disastrous.

VARIATION OF THE COMPASS.

The magnetic variation for 1879 is **12° 50′ W.**, with an annual increase of about **3′**.

COAST FROM KENNEBUNK RIVER TO CAPE NEDDICK.

From the mouth of Kennebunk River the shore takes a broad curve to the westward for a little over three miles, and then turns again to the southward for three miles more,—thus forming a bay five miles wide and making into the land a mile and three-quarters,—measuring from a line joining its eastern and western points. Kennebunk Point is the eastern end of this bay, and a point called Wells' Neck forms the western end.

From the mouth of the Kennebunk to Gelaspas Point the distance is a little over a mile, and the shore-line shows a low beach, backed by thick woods, for two-thirds of a mile; and then grassy land faced with rocks, and mostly cleared, for the remaining third of a mile. One or two houses and occasional groves of trees appear. Gelaspas Point is a long, low, narrow point running out in a **S SW.** direction for a quarter of a mile from the shore. A group of bare rocks lies two hundred and fifty yards **S.** by **E.** from this point; and a large barn with cupola on top shows on the high ground to the northward.

Gelaspas Point.

From Gelaspas Point the shore has a general course **W.** for nearly three miles to the mouth of a shallow stream, called Webhannet River. The shore is a low beach backed by salt meadow, and this again by partly cleared and partly wooded slopes from twenty to seventy feet high. On the summit of the ridge is seen the village of **Wells**, which extends to the southward and westward for several miles.

The long sand-beach which extends from Gelaspas Point to Ogunquit, a distance of seven miles, is called **Wells' Beach.**

On the western side of Gelaspas Point empties the Mousam or **Maguncook River**, a small stream running nearly **N.** and **S.**, and of no commercial importance. Its mouth is easily recognized by a round hillock about fifteen feet high, with a cliff-like face, which forms the eastern side of the entrance. It is the only hillock of this description between Gelaspas and Ogunquit, and is called **Great Hill.**

Mousam River.

Little River. A mile and a quarter to the westward of Mousam Entrance is the entrance to another stream called Little River. It is a very narrow and shallow streamlet, which takes its rise among the hills back of Wells and flows through a very crooked channel to the sea. Little River entrance is a little over a mile to the eastward of the entrance to Webhannet River.

Webhannet River or **Wells' River** is an arm of the sea which runs into the marsh-land, following the course of the beach for a mile and a half to the southwestward, and sending off many small branches which terminate at the foot of the hills. From the mouth of this river the shore takes a course about **SW.** by **S.** for two miles to Wells' Neck, which may be known by its being the first high land to the southwestward of Little River, and by the large hotel (the **Atlantic House**) built right upon the beach, half a mile to the northward of the neck. On Wells' Neck, which is forty feet high and bare of trees, are several houses; and several ledges, bare at half-tide, lie off the shore.

Wells' Neck.

From Wells' Neck to Ogunquit the course of the beach is **SW.** by **S.**, and the distance two miles and a quarter. The character of the shore remains the same,—a long pebbly beach backed by wooded slopes, and the higher lands dotted with houses. **Ogunquit** is the name of a settlement built upon the western bank of a small arm of the sea extending into the land at the southern extremity of Wells' Beach, and running to the northeastward behind the beach nearly to Wells' Neck. There is no harbor here, but the coast is bold-to and can be safely coasted at a distance of three-quarters of a mile in fine weather.

From Ogunquit the general course of the shore-line is **SE.** ½ **S.**, and the distance a mile and three-quarters to Bald Head Cliff. The character of the shore is entirely different from that to the northward of this settlement, as it is now composed of steep grassy shores, varying in height from sixty to eighty feet, and the ridges partly crowned with trees and partly under cultivation. Bald Head Cliff is a precipitous hill eighty feet high, and bare of trees except for a single grove of spruce half way up its northern side; and the shore is here very bold and steep-to.

Bald Head Cliff.

From Bald Head Cliff the general course of the shore-line is **SW. ½ S.**, a little over three miles and a quarter, to Cape Neddick; but it is much indented by coves, some of which afford anchorage and shelter to light-draught vessels. The character of the coast is nearly the same as that around Bald Head,—grassy, with cliff-like faces, and the lower land backed by thickly wooded hills. A mile and a quarter below the cliff is Pond Cove, (the first of the indentations between Bald Head and the cape,) whose shores are low, cleared and cultivated. Two bare rocks, surrounded by ledges, lie off the mouth of this cove at a distance of two hundred and fifty yards, and are called **Pond Rocks**, or **Pond Cove Rocks.**

Pond Cove.

CAPE NEDDICK ROADS.

Partly wooded and partly cleared lands extend from Pond Cove a little over a mile to Weare's Point, the northern point of entrance to a nearly circular cove, called Cape Neddick Roads. Into this cove empties a narrow streamlet, upon the banks of which, half a mile above its mouth, stands **Cape Neddick Village.** Weare's Point is low and grassy except on its summit, where there is a thick growth of oak and other trees; and it is shoal in its approaches to a distance of over five hundred yards.

Weare's Point.

The southern point of the entrance to Cape Neddick Roads, which is called Barn Point, is low, grassy and about twenty feet high; and shoal water extends from it to a distance of over three hundred yards. On its southern side, contained between it and Cape Neddick, is a large cove with from three to seven fathoms water, and entirely unobstructed, which often affords shelter to vessels in southerly winds.

Barn Point.

Cape Neddick is a very prominent headland extending out from the main shore in a **SE.** by **E.** direction for a mile. It is in

Cape Neddick.

Latitude ..... 43° 10′ 0″ N.
Longitude ..... 70° 35′ 12″ W.,

and bears from

	Miles.
Cape Small Point, SW. by W. ½ W.	46
Cape Elizabeth, SW. ⅝ W.	29
Cape Porpoise, SW. ½ W.	14
Boon Island, NW. ½ W.	5⅝
Portsmouth Entrance, NE. ½ N.	8¼
Cape Ann, (Thatcher's Island,) N. by E.	31

The northeastern face of Cape Neddick is somewhat steep, and the surface undulating and bare of trees,—the height varying from twenty to eighty feet.

Off the eastern point of the cape, at a distance of forty or fifty yards, lies an islet called Cape Neddick Knubble, and sometimes **York Knubble.** At low water it is connected by a sand-bar with the cape, and is at no time distinguishable as separated from the cape except the point of view be directly opposite the opening,—that is, either **NE.** by **N. ½ N.** or **SW.** by **S. ½ S.** from it. The Knubble is two hundred and fifty yards long, sixty feet high at its southern end, and is rocky and bare of trees.

Cape Neddick Knubble.

Near the southern end of the Knubble, about fifty feet above sea-level, will be seen a conical iron tower, painted red, and forty feet high, with a low wooden dwelling (painted white) about twenty yards to the northward of it. This is York Knubble Light-house, showing a fixed red light, of the fourth order of Fresnel, from a height of ninety-two feet above the sea, visible fifteen miles. Its approximate geographical position is

York Knubble Light-house.

Latitude ..... 43° 9′ 45″ N.
Longitude ..... 70° 35′ 30″ W.

During thick and foggy weather a bell will be struck by machinery,—giving two blows in quick succession, followed by an interval of thirty seconds; and then a single blow, followed by the same interval.

Fog-signal.

The anchorage is good on either side of the cape. On the northern side, either in the Roads or in the cove to the southward of Barn Point, is good shelter in southerly winds, with from twelve feet to six fathoms water. On the southern side of the cape is good anchorage and shelter in northerly and westerly gales, with from two to six fathoms water.

As before mentioned, Cape Neddick Roads are formed by a nearly circular cove opening into the land in a northwesterly direction between Weare's Point and Barn Point. It is about five hundred yards in diameter, but the anchorage, except for light-draught vessels, is narrow. The shelter, however, when once into the cove, is excellent in all northerly and westerly winds and tolerable in southwesterly winds; but the harbor is open to southerly and southeasterly breezes.

DANGERS

IN APPROACHING AND ENTERING CAPE NEDDICK ROADS.

This entrance is obstructed only by the ledges off Weare's and Barn points, respectively. *Weare's Point Ledges* are a number of rocks, bare at low water, extending off in a southerly direction from the point, and not buoyed. Shoal water and sunken ledges lie outside of the bare rocks,—the whole reef extending five hundred yards from shore. *Barn Point Rocks*, most of them bare at low water, extend in a **N NE.** direction from the pitch of the point three hundred and fifty yards, and always show themselves.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING CAPE NEDDICK ROADS.

I. ***Coming from the Northward.***—Desiring to enter the Roads from this direction, steer **SW. ½ W.** about for the middle of the peninsula which forms the cape; and on this course, when Boon Island Light-house bears **SE. ⅛ S.**, six miles distant, with ten fathoms water, steer **NW. ⅛ N.**, keeping the light directly over the stern. When within four hundred yards of Barn Point, and the easternmost extremity of Weare's Point bears **N.** by **E. ¼ E.**, five hundred yards off, and you are in three fathoms, steer **N. ½ W.** into the harbor,—anchoring according to draught. All the ledges that are dangerous show themselves.

Desiring to anchor between Barn Point and the cape, steer **SW. ½ W.**, as before, until Boon Island Light-house bears **SE. ⅛ S.**, when steer **W. ¾ N.**, and anchor in the bight according to draught, in from two to six fathoms. This anchorage is entirely unobstructed, and the water shoals regularly and gradually to the shore.

II. ***Coming from the Eastward.***—Run in **W.** until Boon Island Light-house bears **SE. ⅛ E.** and there is ten fathoms water, when steer **NW. ⅛ N.** until York Knubble Light-house bears **S. ½ E.** Now, if bound into the Roads, steer **N. ½ W.**, with the light-house directly astern, and anchor according to draught. *If bound into the anchorage between Barn Point and the cape,* steer **W. ¾ N.**, as above directed.

III. ***Coming from the Southward.***—Round Cape Neddick in about fifteen fathoms, giving the Knubble a berth of half a mile to the westward. Gradually haul to the westward after passing the Knubble, giving the northern shore of the cape a berth of a quarter of a mile, with about nine fathoms, and run up into the bight,—anchoring at pleasure. Vessels do not enter the Roads for shelter if the wind be from the southward.

ANCHORAGE ON THE SOUTHERN SIDE OF CAPE NEDDICK.

There is good shelter under the southern face of the cape in all northerly, northwesterly and westerly winds, and there are no dangers. The approaches are gradual and unobstructed, and there is from two to six fathoms at the anchorage. Strangers should have no difficulty in entering if the courses given below are made good.

SAILING DIRECTIONS.

I. ***Coming from the Eastward.***—Bring Boon Island Light-house to bear **SW.**, four miles distant, and York Knubble Light-house **W. ½ N.**, with thirty-five fathoms, and steer **W.**, carrying not less than fourteen fathoms, until the latter light-house bears **N. ½ W.**, when **W.** by **N. ¾ N.** will lead in. Anchor at pleasure, according to draught, in from two to six fathoms.

II. ***Coming from the Southward, off shore.***—Bring Boon Island Light-house to bear **NE.** by **E. ¾ E.**, four miles off, and York Knubble Light-house **N. ¾ W.** White Island Light-house will then bear **SW. ½ S.**, and you will be in thirty fathoms, and must steer **N.** by **W. ½ W.** This course will lead safely to the anchorage. *Or,* bring York Knubble Light-house to bear **NW.** by **N. ¼ N.** and Boon Island Light-house **NE.** by **E. ¾ E.**, two miles distant, in thirty fathoms water, and steer **NW. ½ N.**, carrying not less than twelve fathoms, until the former light-house bears **NE. ½ E.** and you are in about eight fathoms. Then haul up towards the southern shore of the cape, and anchor according to draught.

III. ***Coming from the Southward, inside of York Ledge.***—Steer **NE. ½ N.**, midway between York Ledge and Stone's Rock, (passing between them in about eight fathoms,) and keep about a mile and a half from shore, in from nine to thirteen fathoms, until York Knubble Light-house bears **N.** by **E.** and Boon Island Light-house **E SE.** Then steer **N.** by **W. ½ W.** to the anchorage.

LIGHT-HOUSES.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Boon Island Light-house	43 7 16	70 28 36	4 41 54.4	Fixed.	133	16
York Knubble Light-house	43 9 45	70 35 30	4 42 22.0	Fixed red.	93	15

VARIATION OF THE COMPASS.

The magnetic variation for 1879 is 12° 41′ W., with an approximate annual increase of about 2¼′.

YORK RIVER.

From the eastern extremity of Cape Neddick to East Point, the northern point of entrance to York River, the course is **SW. ½ W.**; but the general course of the shore-line is, however, **S SW.** for a little over two miles. For a mile and three-quarters of this distance there stretches along the shore a beach known as **The Long Sand**, which runs from Cape Neddick to **Roaring Rock Point.** The whole of the land back of the beach is of moderate height and slopes gently back from the water. It is mostly cleared, settled and under cultivation; but here and there the cleared lands are interspersed with groves of trees.

York River, which affords an excellent harbor of refuge for light-draught vessels, empties into the sea between East Point on the north and Sweat's Point on the south. Its entrance is in

Latitude ..... 43° 7′ 11″ N.
Longitude ..... 70° 38′ 0″ W.,

and is two miles and a half **SW. ½ W.** from Cape Neddick Knubble; six miles and a half **W.** by **N. ½ N.** from Boon Island Light-house; five miles and a half **NE.** from Portsmouth Entrance; and twenty-nine miles **N. ¾ E.** from Thatcher Island Light-houses.

East Point is low, partly cleared and under cultivation, and there are some trees on the higher slopes. Half a mile **W SW.** from it lies **Sweat's Point,** which is forty feet high, cleared and partly cultivated; and between the two points the river is half a mile wide.

Seven-eighths of a mile above the river mouth is **York Village,** built upon the northern bank.

Three-quarters of a mile **W.** from East Point a narrow island, about thirty feet high and bare of trees, appears to occupy the middle of the river. It is not in reality an island, but a neck of land connected with the northern shore by a strip of beach about fifty yards wide, and called Stage Neck. It lies **E.** and **W.**, is one-third of a mile (six hundred and fifty yards) long, and contracts the entrance to a width of one hundred and seventy-five yards, causing an abrupt turn in the course of the channel, which, after running nearly **W.** for two-thirds of a mile, on its reaching the western end of Stage Neck turns abruptly about **NE.**, which course it keeps for a third of a mile, and then takes its general direction **W NW.** to Sewall's Bridge. **Stage Neck.**

On the western side of Stage Neck the northern shore of the river is occupied by the village, and the lands are low close to the shore; but behind the settlement they rise to a height of one hundred feet. They are all cleared and mostly cultivated; and low and cleared lands occupy the northern side of the river from the village to **Old York Village,** which comes down to the bank at Sewall's Bridge.

On the southern side the shore-line takes a nearly **W.** course from Sweat's Point for nearly a mile, when it turns abruptly and runs **N.** by **E.** for two-thirds of a mile, and then **W NW.** to **Sewall's Bridge;** but the wide bay thus formed is entirely bare at low water, and is moreover occupied by several islands which, connected with each other by salt-meadow, form the true shore of the river.

The first of these islands met with by a vessel bound in lies **W.** from Stage Neck, about one hundred and fifty yards, and is called Harris' Island. It is low, grassy, triangular in shape, and three hundred and fifty yards long; and at low water dry flats connect it with the shore. Between this island and Stage Neck runs the channel, which is here only seventy-five yards wide. Its course is **N.** and **S.** for nearly a quarter of a mile for the lowest two wharves in the village. **Harris' Island.**

Two hundred and fifty yards to the northward of Harris' Island lies another low islet, also bare of trees and surrounded by flats. **W.** of it, one hundred yards distant, and connected with it by salt-meadow, is an island forty feet high, with one or two houses near its southern end and a grove of trees on its northern extremity.

Another small islet, thirty feet high and wooded, lies on the southern side of the channel, opposite the mill-dam at the northern end of the village. The main shores and some of the islands are under cultivation; but where the lands are not planted they are devoted to cattle and sheep raising.

DANGERS

IN APPROACHING AND ENTERING YORK RIVER.

I. ***Coming from the Eastward.***—There are no dangers in the approaches to this harbor from the northward and eastward until you are past East Point, when there will be seen near the northern shore of the river, between East Point and Fort Point, (the eastern end of Stage Neck,) a long line of ledges and bare rocks. The bare ledge nearest to the shore and nearest to East Point is called Milbury's Ledge, and is six hundred yards **W.** from East Point and one hundred and fifty yards from shore. The dry part is surrounded by shoals and sunken rocks. ***Milbury's Ledge.***

One hundred yards **W.** from Milbury's Ledge lie the Black Rocks, also bare at high water, forming a line or reef, which, at low water, is nearly three hundred yards long **E.** and **W.**, and is also surrounded by shoal water. About one hundred and fifty yards to the southward of the easternmost Black Rock there is placed a red spar-buoy (No. 2) in ***Black Rocks.***

fourteen feet water. Vessels must pass to the southward of this buoy, between it and the black buoy on Sweat's Point Reef.

Sweat's Point Reef. Sweat's Point Reef makes off from the point of that name in a northeasterly direction for about two hundred yards, and for half of this length it is bare at mean low water. A black spar-buoy, marked No. 1, is placed in twelve feet water off its northeastern end, and serves to outline the limits of the channel, which passes between it and the buoy off Black Rocks.

Fort Point Rock. When past the above-mentioned buoy there will be seen ahead, just to the southward of Fort Point, a red spar-buoy, marked No. 4. This is off Fort Point Rock, which is bare at low water, and lies close in with the eastern shore of Stage Neck. Vessels must pass to the southward of this buoy, giving it a small berth,—the channel passing between it and The Rock's Nose, which lies on the southern side of the river.

The Rock's Nose. The Rock's Nose is a ledge or reef of rocks which makes off in a northeasterly direction from the southern shore of the river a third of a mile to the westward of Sweat's Point. It extends off two hundred yards from shore, is bare at low water, and is not buoyed. The channel between it and Stage Neck is one hundred and fifty yards wide.

When past The Rock's Nose a red spar-buoy (No. 6) will be seen off the southwestern extremity of Stage Neck. This is on Stage Neck Ledge, which makes off for a distance of one

Stage Neck Ledge. hundred yards, and is almost entirely bare at low water. The buoy is about twenty feet to the southwestward of the extremity of the ledge, and is placed in seven feet at low water, just inside the edge of the channel. The course passes to the southward of it close-to, and then turns abruptly to the northward. Beyond this there are no buoys.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING YORK RIVER.

I. ***Coming from the Eastward.***—Bring Boon Island Light-house to bear **SE.**, Cape Neddick **NW.** by **W.**, and East Point **W.**, with fourteen fathoms water, and steer **W.** ¼ **S.**, carrying five fathoms, until East Point bears **NE.** by **N.** ⅛ **N.**, six hundred yards distant, when there will be five fathoms water. Now steer **W.** by **N.** ½ **N.**, carrying eighteen feet water, and leaving the Black Rocks to the northward and Sweat's Point to the southward. On this course, when Fort Point is nearly abeam and about one hundred and fifty yards off, and you are in about sixteen feet, soft bottom, steer **W.** by **S.** ¼ **S.**, leaving The Rock's Nose nearly fifty yards to the southward. After passing it, keep as nearly as possible midway between the two shores of the river, by which means you will pass the narrowest part of the channel in the best water, and the soundings will soon deepen to four fathoms. When the western point of Stage Neck bears **N.** ⅛ **W.**, one hundred yards distant, steer nearly for the southern end of Harris' Island until the southwestern end of Stage Neck bears **NE.** by **N.** ¼ **N.**, when anchor in three and a half fathoms, soft bottom; or, *if bound up to the village,* continue the course for the southern end of Harris' Island until the hillock on the western end of Stage Neck bears **NE.** ¼ **E.** and you are in twenty-one feet, soft bottom, when steer **N.** by **E.** until you are abreast of the eastern point of Harris' Island and almost exactly midway between it and the western point of Stage Neck,—bearing **W.** ½ **S.** and **E.** ½ **N.**, respectively. Now steer **NE.** ½ **N.** until the easternmost pier in the village wharf-line bears **E.** by **N.** ½ **N.**, when haul up for it, anchoring within fifty or one hundred yards of the wharf, in twenty feet water. Strangers must not attempt to go above this without a pilot, and the chart is the best guide thus far,—but the channel is narrow, crooked, and has only eight feet at low water.

DANGERS

IN APPROACHING AND ENTERING YORK RIVER.

II. ***Coming from the Southward, off shore.***—Vessels approaching this harbor from the southward, off shore, will first meet with York Ledge, a dangerous ledge, lying four miles and a half **S.** by **W.** from Cape Neddick and three miles **SE.** by **S.** from Sweat's Point. It extends

York Ledge. nearly **E.** and **W.**, is three-quarters of a mile long, bare at three-quarters ebb, and is marked by an iron spindle twenty-eight feet high, with an iron cage on top. From the spindle the sunken portion of the ledge extends **NE.** nearly half a mile; and in coming from the eastward, therefore, care should be taken to give it a good berth,—not less than a mile; but vessels may pass to the southward of it, between The Triangles and York Ledge.

Vessels pursuing this latter course must look out for Murray's Rock, which lies a mile and a half SW. from York Ledge, has six feet at low water, and forms part of *The Triangles*. A nun-buoy of the second class, painted red and black in horizontal stripes, is placed on the southern side of the ledge in forty feet water. The channel between York Ledge and Murray's Rock is over a mile wide and perfectly unobstructed. The deepest water is midway between the two, but the spindle on York Ledge may be passed within a quarter of a mile in ten fathoms. ***Murray's Rock.***

After passing between The Triangles and York Ledge the course for the mouth of York River leads near Stone's Rock, a bad ledge, lying S. by W. ¼ W. from Sweat's Point one mile and a quarter and half a mile from shore. It is dry at low water, and is marked by an iron spindle, painted black, placed on the eastern end of the rock, which must be left to the westward going in. ***Stone's Rock.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING YORK RIVER.

II. ***Coming from the Southward, off shore.***—Bring Boon Island Light-house to bear NE. by E. ½ E., distant three miles, and Cape Neddick N. by W. ½ W., five miles, with about thirty fathoms water, and steer NW. ¼ N. for East Point, carrying ten fathoms water. When within twelve hundred yards of the point, in eleven fathoms, and Cape Neddick Knubble bears NE. by N., steer W. by N. ½ N., carrying not less than eighteen feet, and leaving the Black Rocks to the northward and Sweat's Point to the southward. When the eastern point of Stage Neck (Fort Point) bears N. by E. ½ E., one hundred and fifty yards off, and you are in about sixteen feet, soft bottom, steer W. by S. ¼ S., and follow the directions given above. These courses pass a mile and an eighth to the northward of the spindle on York Ledge.

To pass between York Ledge and The Triangles.—Bring Boon Island Light-house to bear NE. by N. ½ N. and White Island Light-house W. by S. ½ S., with forty-three fathoms, soft blue mud, and steer N NW. for Sweat's Point. This course leads between the two ledges with not less than six fathoms. Continue it until Cape Neddick Knubble bears NE. by N., with eleven fathoms water, when steer N. ¼ W., carrying not less than five fathoms, until East Point bears NE. by N. ⅛ N., six hundred yards distant, and you are in five fathoms water. Then steer W. by N. ½ N., with not less than eighteen feet, until Fort Point bears N. by E. ½ E.; when there will be sixteen feet, and you must steer W. by S. ¼ S., following the previous directions. These courses pass three-eighths of a mile to the southward of the spindle on York Ledge and a mile to the northward of Murray's Rock. Stone's Rock is left three-quarters of a mile to the westward.

DANGERS

IN APPROACHING AND ENTERING YORK RIVER.

III. ***Coming from the Southward, alongshore.***—Coming alongshore, the first danger met with is Murray's Rock, (described above,) which must be left on the eastward. It has six feet at mean low water, and is marked by an iron nun-buoy of the second class, painted red and black in horizontal stripes, placed on the southern side of the rock in forty feet water. Passing this, the channel leads between York Ledge and Stone's Rock. ***Murray's Rock.***

York Ledge, a mile and a half NE. from Murray's Rock, is bare at low water, and is marked by an iron spindle with cage on top. It is on the eastern side of this channel, is not in the way except for a vessel beating to windward, and is to be left to the eastward. ***York Ledge.***

Stone's Rock lies one mile and a quarter S. by W. ¼ W. from Sweat's Point and half a mile from shore. It is bare at low water, and is marked by an iron spindle placed on the eastern end of the rock, which must be left to the westward going in.

A shoal, with about three fathoms water, lying just to the southward of Stone's Rock, off the entrance to Brave Boat Harbor, (see page 504,) has been reported by Lieutenant Commander A. S. Crowninshield, U. S. N., who furnishes the following bearings of its position: **Boon Island Light-house, E. ¼ S.; Stone's Rock spindle, NE. ¼ E.; White Island Light-house, S. ⅝ W.; York Ledge spindle, E. by S. ⅛ S.**

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING YORK RIVER.

III. ***Coming from the Southward, alongshore.***—Steer NE. by N. ½ N. for the eastern end of Cape Neddick until Sweat's Point bears N NW., one mile and a quarter distant, and you are in eleven

Sailing Directions---York River. fathoms water; when steer **N.** ¼ **W.**, carrying not less than five fathoms, until East Point bears **NE.** by **N.** ⅛ **N.**, six hundred yards distant, and there is five fathoms water. Now steer **W.** by **N.** ½ **N.**, with eighteen feet, leaving the Black Rocks to the northward and Sweat's Point to the southward. Continue this course until Fort Point is abeam, when steer **W.** by **S.** ¼ **S.**, and proceed as before directed. These courses pass one mile to the westward of Murray's Rock; three-quarters of a mile to the eastward of Stone's Rock; and a mile and a quarter to the westward of York Ledge.

General remarks on the channel.—Between Stone's Rock and Sweat's Point the shore is bold-to, and may be approached to within a quarter of a mile. Vessels using this harbor must remember that not over eight feet at mean low water can be taken up to the anchorage, and that only through a very narrow channel. It is important to get in with the flood-tide, as in case of getting ashore there will be a probability of early release by the rising of the tide; and the ebb sets strongly upon Stage Neck, causing some difficulty in rounding the western point. Care should be taken to give this point a berth of one hundred and fifty yards.

The most critical point in the channel for a vessel drawing all the water there is, is between The Rock's Nose and the southwestern point of Stage Neck. Here the channel is extremely narrow,—being not over thirty yards wide,—and the best water is in the middle of the passage.

After passing Harris' Island the river is full of flats on both sides, and the chart will be the best guide to enable vessels to avoid them. It is not likely that a stranger will undertake to pass above the anchorage off the lower wharves without a pilot.

LIGHT-HOUSES.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		m. s.	Feet.	
Boon Island Light-house	43 7 16	70 28 36	4 41 54.4	Fixed.	.....	133	18
White Island Light-house	42 58 0	70 37 25	4 42 29.7	Flashing red and white.*	0 30	87	15

TIDES.

Corrected Establishment	11h 28m
Mean Rise and Fall of tides	8 ft.
Mean Rise and Fall of Spring tides	9 ft.
Mean Rise and Fall of Neap tides	7 ft.
Mean duration of Rise	6h 10m
Mean duration of Fall	6h 18m
Mean duration of Stand	0h 38m

VARIATION OF THE COMPASS.

The magnetic variation at York River for 1879 is about 12° 27′ **W.**, with an approximate annual increase of nearly 2¼′.

PORTSMOUTH HARBOR.

From York River Entrance to Portsmouth the distance is four miles and a half, and the general course of the shore is **SW.** ¼ **S.** Twelve hundred yards below Sweat's Point is **Godfrey's Cove,** a semicircular curve in the shore, which affords anchorage in fine weather for the mackerel fishermen. The shores are of the same character as those of Sweat's Point,—being of moderate height, partly cleared and under cultivation. From Godfrey's Cove it is one mile and three-eighths to Brave Boat Harbor, another small and very shallow cove. The shores between Godfrey's Cove and this harbor are quite low, cleared and under cultivation. The cove is of no importance,—being quite shallow, as are all of the indentations between Godfrey's Cove and the entrance to Portsmouth.

Brave Boat Harbor.

Cutts' Island. The land on the southern side of Brave Boat Harbor is Cutts' Island, composed mostly of grass-lands, although there are a few trees here and there on the surface. It is low,—being in no place over forty feet high, and generally not over twenty. Cutts' Island (in reality not an island) is nearly separated by a shallow creek, called **Mill Creek,** (a tributary of Chauncey's Creek, see page 506,) from Gerrish's Island, which forms the eastern shores of the entrance to Portsmouth Harbor, lies **NE.** and **SW.**, and is a mile and three-quarters long. It is of moderate height,

Gerrish's Island. with an undulating surface, some of which is covered with woods. Its eastern shores, viewed from seaward, show houses scattered at intervals along the coast, and here and there groups of oak, pine and other trees. The sea-face of the island presents in two or three places a steep cliff-like formation, and rocks face the shore-line near the

*Every alternate flash red.

entrance to Portsmouth. Several small rocky islets lie along the southern shore of Gerrish's Island, most of them surrounded by ledges and rocks, making the approach to the island dangerous. Indeed, vessels should give the southern shore of Gerrish's Island a berth of a mile.

Gerrish's and Cutts' islands were formerly spoken of as one island, which was called **Champernowne's Island**, from the name of the first proprietor.

The entrance to Portsmouth Harbor lies in

Latitude.....43° 3′ 0″ N.
Longitude.....70° 41′ 30″ W.,

and is fifty-six miles **SW.** by **W.** ½ **W.** from Seguin Island; fifty-four miles **SW.** by **W.** from Cape Small Point; thirty-seven miles **SW.** ½ **W.** from Cape Elizabeth; and twenty-five miles **N.** from Cape Ann, (Thatcher's Island.)

Portsmouth Harbor is formed by the lower reaches of the Piscataqua River, which empties into the ocean between Gerrish's Island on the east and Great Island on the west. At this point it is a mile and a quarter wide, but the width of this channel is somewhat diminished by two islets lying off the southwestern point of Gerrish's Island at a distance of half a mile from shore. The actual channel is thus contracted to a width of five-eighths of a mile. The course **Piscataqua River.** of the Piscataqua River from its mouth to the city of Portsmouth is first **N.** ½ **E.** for one mile, between Gerrish's and Great islands; then **W.** for one mile and a quarter, to Peirce's Island; and then **NW.** for three-quarters of a mile, to the anchorage off the town. The current is very strong and there are many eddies, owing to the abrupt turns made by the stream in its course and the numerous islands which diminish the width of its channel. There are few good anchorages except off the town or near the navy-yard, as the shores are bold-to and the bottom in mid-channel mostly rocky.

Gerrish's Island has been already described. One mile and three-quarters **SW.** from it is a bare point **Odiorne's Point.** of moderate height, called Odiorne's Point, on the mainland, and three-quarters of a mile **S.** from the southern end of Great Island. It is tolerably bold-to and may be approached within three hundred yards with four fathoms water.

From Odiorne's Point the course of the mainland is **N.** by **W.** for nearly three-quarters of a mile to Frost Point, a steep grassy point of moderate height, with several houses on its summit. The land between Odiorne's Point and Frost Point is entirely bare of trees and grassy, and the shores rise with a very gentle inclination and **Frost Point.** are of moderate height.

Frost Point is the southern point of entrance to Little Harbor, an irregularly shaped cove contained between the southern shores of Great Island and the mainland. It lies nearly **E.** and **W.**, and is nearly three-quarters of a mile long, with an average width of a quarter of a mile. From its western end a narrow passage leads, with many turnings among the islands, into the main channel of the river. **Little Harbor.** Little Harbor affords a safe and convenient anchorage for light-draught vessels that may wish to make a harbor during heavy weather. Should the tide be unfavorable for reaching Portsmouth, or the wind light, a comfortable berth may be found near the western end of the cove, about five hundred yards to the westward of Frost Point, in nine or ten feet at low water. The anchorage is, however, not available for vessels drawing five feet after half-ebb or before half-flood, as there is a bar with two feet at mean low water stretching from shore to shore. Vessels drawing eight feet must wait for three-quarters flood before entering, and those drawing nine feet cannot enter until high water.

On a bare rocky islet, one hundred yards **S.** from the southeastern point of Great Island, is built an iron tripod beacon with lozenge-shaped top. This rock is connected at low water with the point of the island, which is called Jerry's Point, and the beacon is called **Jerry's Point Beacon.** It is painted red, and the letters "L. H." are **Jerry's Point.** marked on its top to designate the entrance to Little Harbor, which lies between this beacon and Frost Point and is a quarter of a mile wide.

Nearly half a mile **SW.** by **W.** from Gerrish's Island, and three-quarters of a mile **E.** from Jerry's Point, is a long ledge or bare rock, about an eighth of a mile long, called The Whale's Back. It lies nearly **E.** and **W.**, and near its western end is built Whale's Back Light-house, a granite tower sixty-nine feet high, which shows a fixed **The Whale's Back and Light-house.** light, varied by white flashes, from a height of sixty-five feet above sea-level, visible thirteen miles. The light is of the fourth order of Fresnel, flashes once every minute and a half, and is in

Latitude.....43° 3′ 30″ N.
Longitude.....70° 41′ 48″ W.

A very little to the westward of the light-house stands the old light-tower upon a circular stone pier; **Fog-signal.** and a little to the northward of this will be seen a low iron tower, painted red, which contains the fog-signal. This is a third-class Daboll trumpet, giving blasts of eight seconds' duration at intervals of twenty-two seconds.

There is no passage between The Whale's Back and the shore of Gerrish's Island.

Near the southwestern end of Gerrish's Island, and a quarter of a mile **SE.** by **E.** from it, lies a small, bare, rocky islet called **Horn Island.** A ledge, dry at low water, connects it with the shore, and the islet is surrounded by shoals.

Five hundred yards **S.** from the southwestern end of Gerrish's Island lies a small bare islet about two hundred yards long; and one hundred and fifty yards to the southward of it is another and smaller islet. Ledges and rocks surround these islets to a considerable distance, and they are called White Islands. The northernmost and **White Islands.** largest lies one-third of a mile **E.** from Whale's Back Light-house; and a passage with five feet at mean low

water leads between them and Horn Island into the main channel, and another with the same amount leads between them and The Whale's Back.

Wood Island. A quarter of a mile N. from The Whale's Back is a low grassy islet, lying N. and S., and about two hundred yards long, called Wood Island. It is surrounded by shoals and ledges, and is the site of the **Quarantine Station,**—being easily distinguished by the hospital buildings upon it.

Great Island. Great Island, which forms the western shore of the river from Little Harbor to Fort Point, is a large irregularly shaped island, lying nearly N. and S., and about a mile long. Its shores are of moderate height and almost entirely bare of trees,—being mostly grass-lands. Jerry's Point, (before mentioned,) the southeastern end, is a round bare bluff of moderate height; and back of it, and to the northward, are several houses and some fruit-bearing trees.

Portsmouth Light-house. The northeastern point of Great Island is called **Fort Point** because upon it is built a rectangular fortification, called **Fort Constitution.** Seen from the entrance to the **Outer Harbor** or roads this fort and its surrounding buildings and the light-house are very prominent objects. On the southeastern extremity of Fort Point, (which is low and rocky,) and about one hundred yards to the southward of the fort, is built Portsmouth Light-house,—an iron tower, sixty feet high and painted white. The keeper's dwelling stands about three hundred yards W. from the tower and is also white. This light-house shows a fixed white light, of the fourth order of Fresnel, from a height of seventy feet above sea-level, and marks the entrance to the **Inner Harbor.** The light is visible fourteen miles, and its geographical position is

Latitude ..... 43° 4′ 15″ N.
Longitude ..... 70° 42′ 32″ W.

The river here takes an abrupt turn to the westward and the real harbor begins.

The northern shore of Great Island is occupied by the village of **Newcastle**, and vessels may anchor close in along the front of this village, clear of the strength of the tide; but the anchorage is not nearly so good as that on the opposite shore of the river.

Kittery Point. On the eastern side of the river Gerrish's Island is separated by a wide but shallow cove from Kittery Point, a long peninsula of the mainland, running in an E. and W. direction. Its western end, which is settled and shows wharves and warehouses along its water-front, is half a mile N. by W. ½ W. from Fort Constitution and three-quarters of a mile NW. from the western end of Gerrish's Island. Five hundred yards E. from the extremity of Kittery Point and close to its southern shore, on a somewhat steep hillock, is built **Fort McClary**, which is a little over half a mile NE. from Fort Constitution.

Pepperell's Cove. The wide cove separating Kittery Point and Gerrish's Island terminates in **Chauncey's Creek**, which separates Gerrish's and Cutts' islands from the mainland, and leads into Brave Boat Harbor, to the northeastward. This cove, which is called Pepperell's Cove, affords a good anchorage in from six feet to four fathoms water for vessels not desiring to go up to the town. There are several islands off the western end of Gerrish's Island, with which they are connected at low water. The westernmost of these are two small low islands, called the **Fishing Islands**, which lie N. and S. from each other, a third of a mile from the western side of Gerrish's Island, and are joined to it at low water by a dry flat.

Gooseberry Islands. A quarter of a mile E NE. from the Fishing Islands are the Gooseberry Islands, a group of one small grassy islet and three very small, round, rocky ones a hundred yards E. from it. They are all connected with the shore at low water; and one hundred and fifty yards N. from the largest island is a bare islet, two hundred and fifty yards long, with several houses upon it. At low water it forms part of Kittery Point, and between it and the Gooseberry Islands is the entrance to Chauncey's Creek.

Spruce Creek. On the western side of Kittery Point, and separating it from the mainland, (called **Kittery Foreside,**) is Spruce Creek, which empties into the river through a channel three hundred yards wide, with from four to five fathoms at mean low water. The creek widens after passing to the northward of Kittery Point, but the channel becomes narrower and very much shallower. A draw-bridge unites Kittery Point and Kittery Foreside, crossing the creek two hundred yards above its mouth.

Anchorage with from three to five fathoms water is found between the southwestern shore of Kittery Foreside and the islands which lie between it and the town of Portsmouth; and there are good anchorages between and among the islands themselves. Of these islands, on proceeding to the westward from Fort Point, you will first see a small round

Clarke's Island. islet, called Clarke's Island, which is bare of trees and of moderate height, and lies nearly three-quarters of a mile NW. by W. from Fort Constitution and three-eighths of a mile W. from Kittery Point. On its southern side it is extremely bold-to; and it is situated exactly on the edge of the main channel of the harbor, which is here only three hundred and fifty yards wide between Clarke's Island and the northern shore of Great Island.

Jamaica Island. Four hundred and fifty yards N. from Clarke's Island lies Jamaica Island, sometimes called **Trefethen's Island**, which is grassy, of irregular shape, and about two hundred and fifty yards long N. and S. The land is low and bare of trees, and has two or three houses near its southern end; and a channel one hundred yards wide separates it from the mainland of Kittery. Here is good anchorage with three or four fathoms at low water, hard clay bottom.

There is good anchorage in the passage between Jamaica and Clarke's islands, and between the latter and the large island to the westward of it, which is called Seavey's Island. This island is between seven and eight hundred yards square and of irregular shape; and is separated from Clarke's Island by a passage three hundred and fifty yards wide, through which four fathoms water can be taken. Its surface is hilly and undulating, grassy and bare of trees; and its southern face, which is steep and somewhat precipitous, is very bold-to,—ten fathoms being found within forty yards of the rocks. On its southern side, about midway between its southeastern and southwestern points, is built **Fort Sullivan**, a small earth-work, nearly circular in form. The river here is only three hundred and fifty yards wide and the channel only two hundred; and the current runs with considerable velocity. **Seavey's Island.**

On its northern side Seavey's Island is separated from the mainland of Kittery by a passage three hundred and fifty yards wide, through which thirteen feet at low water may be carried up to the eastern end of Navy Island and the back of the Navy Yard. This channel, which begins at Jamaica Island, runs along the southern shore of Kittery Foreside, and behind Jamaica, Seavey's, Navy, Squash and Badger's islands, and joins the main channel at the western end of the last-named island a little over a quarter of a mile to the eastward of the Portsmouth, Saco and Portland Railroad Bridge.

Seavey's Island is separated on the west from Navy Island by a passage from fifty to eighty yards wide and quite shallow. Four hundred yards above the western end of this passage it is crossed by a bridge which connects Navy and Seavey's islands. Ten feet and a half at high water may be carried from the main channel up to the bridge, and light-draught vessels are sometimes brought into this passage. **Navy Island.**

On Navy Island is situated the naval dock-yard of the United States, known as **Kittery Navy Yard.** It occupies the whole island, which is seven hundred yards long **E.** and **W.** and nearly six hundred wide. The docks and ways are mostly on the western face of the island, while the ship-houses, &c., occupy the southern and eastern faces. There is from four to eight fathoms water close up to the shore on the southern point of this island, but all of the other sides are shoal. A bridge connects Navy Island with the town of Kittery on its northern side.

The southern banks of the river, westward from Great Island, are formed by a number of islands, connected with Great Island, with each other and with the city of Portsmouth by bridges. Of these, the first to the westward of Great Island is Goat Island, small, low and bare of trees, with several houses upon it and two or three wharves on its northern shore. It is an eighth of a mile **W.** from Great Island, with which it is connected by a bridge; and here the river is only three hundred yards wide between Seavey's and Goat islands. On the west, Goat Island is joined by another bridge to **Shapley's Island**, two hundred yards to the westward, which is small and bare, lies nearly **N.** and **S.**, and has several houses upon it. **Goat Island.**

At low water Shapley's Island is joined by a dry reef to Peirce's Island, which is one hundred yards to the northward, and lies **W NW.** and **E SE.** off the lower portion of the town of Portsmouth. On its eastern end, which is a steep bluff, is built an earth-work of irregular shape, called **Fort Washington**. The main channel passes between the eastern point of Peirce's Island and the southwestern point of Seavey's Island, called **Pull-and-be-damned Point.** Both shores are bold-to and the channel is deep, with a width of only two hundred and fifty yards and a strong current. The western end of Peirce's Island is low, bare of trees, and has one or two houses upon it; and is separated from the city of Portsmouth by a shallow passage one hundred yards wide. This island is also known as **Oliver's Island** and **Amazeen Island**,—these names having been given to it by those who have at different times owned it. **Peirce's Island.**

A small islet, surrounded by rocks and ledges, and called **One-Tree Island**, lies two hundred yards **N.** from the western end of Peirce's Island.

Pumpkin Island lies on the northern side of the channel, nearly four hundred yards **W.** from Navy Island, and in line between it and Badger's Island. It is nearly opposite to One-Tree Island, with a channel between them a quarter of a mile wide, and is surrounded by shoals and ledges. **Pumpkin Island.**

One-eighth of a mile (two hundred and fifty yards) to the westward of Pumpkin Island is the eastern end of Badger's Island, which lies **E.** and **W.**, about a hundred and fifty yards off the Kittery shore, and nearly six hundred yards **W.** from Navy Island. It is a long and narrow island, of moderate height, a quarter of a mile long, bare of trees, and has several houses upon it. The river, between Badger's Island and the city, is a little over three hundred yards wide and very deep, with hard and rocky bottom. **Badger's Island.**

A small, low, bare islet, called **Squash Island**, lies one hundred yards **E.** from the eastern point of Badger's Island and the same distance from the Kittery shore.

The city of **Portsmouth** occupies the mainland, on the southern shore of the river, and the eastern shore of a large but shallow cove which makes in to the southward for three-quarters of a mile. At its northwestern end a bridge connects the city with a low island, called Noble's Island, lying one hundred and fifty yards to the northwestward of the city, and on the western bank of the river, which here makes a turn nearly **N.** for about three-quarters of a mile. Noble's Island is thickly settled, and occupied by ship-yards, railway-shops, &c. The Portsmouth, Saco and Portland Railroad crosses it from its northern to its southern end,—the railroad bridge connecting it with the mainland of Kittery at its northern end. **Noble's Island.**

Kittery is a village or small town, situated on the northern shore of the river, directly opposite to Portsmouth. There is good anchorage under this shore for light-draught vessels either between Badger's Island and Kittery, in from seven to fifteen feet water, or behind Navy Island, in from twelve to eighteen feet. The land behind the village is of moderate height, with a

surface diversified by hills and valleys, by partly cleared and partly wooded lands, and is under cultivation to a considerable extent.

The Piscataqua River here separates the States of Maine and New Hampshire,—Kittery being in the former and Portsmouth in the latter State.

DANGERS

IN APPROACHING AND ENTERING PORTSMOUTH HARBOR.

I. ***Coming from the Northward, alongshore.***—A vessel coming alongshore and bound into Portsmouth Harbor will first encounter York Ledge, (see page 502,) which lies four miles and a half **S.** by **W.** from Cape Neddick and a little over five miles **E NE.** from the entrance to Portsmouth. It extends nearly **E.** and **W.**, is three-quarters of a mile long, bare at three-quarters ebb, and is marked by an iron spindle, twenty-eight feet high, with cage on top. From this spindle the sunken portion of the ledge extends **NE.** nearly half a mile.

York Ledge.

Two miles **NW.** from York Ledge is Stone's Rock, which is bare at low water half a mile from shore, and is three miles and a half above the southwestern point of Gerrish's Island. An iron spindle, with cage on top, is placed on its eastern end, and must be left to the westward by vessels bound to the southward.

Stone's Rock.

To the southward of Stone's Rock, off the entrance to Brave Boat Harbor, *a detached shoal, with about three fathoms water on it,* is reported to exist by Lieutenant Commander A. S. Crowninshield, U. S. N., upon the following bearings: **Boon Island Light-house, E. ¼ S.; Stone's Rock spindle, NE. ¼ E.; White Island Light-house, S. ⅝ W.; York Ledge Spindle, E. by S. ⅛ S.** The chart shows a depth of from four to seven fathoms in the vicinity of the reported position of this shoal.

The Triangles is an extensive piece of shoal ground lying **NW.** and **SE.**, two miles from the shore, and a mile and a half **SW.** from the spindle on York Ledge. It runs **N NW.** and **S SE.**, and is a mile and a half long. From four to six fathoms water is found upon this ledge except near its southeastern edge, where *Murray's Rock,* with six feet at low water, is marked by a second-class nun-buoy, painted red and black in horizontal stripes, placed on the northern side of the ledge. This buoy must receive a good berth to the eastward from vessels bound to Portsmouth alongshore.

The Triangles.

Two miles and a half due **W.** from the buoy on Murray's Rock, and a mile and a half **E.** by **N.** ¼ **N.** from Whale's Back Light-house, is The East Sister, a small bare rock surrounded by sunken ledges, with from three to six feet at low water. It is a third of a mile from the shore of Gerrish's Island, and there is a good channel one hundred and fifty yards wide between the island and the rock. You must give the rock a berth of a quarter of a mile, as the shoal water extends nearly two hundred yards to the northward and southward from it; and strangers must not attempt to use the channel between it and Gerrish's Island.

The East Sister.

When past The East Sister a red spar-buoy will be seen to the southwestward, about three-quarters of a mile distant. This is on The West Sister, or *Branscomb's Rock,* also bare at low water and surrounded by sunken ledges. It is half a mile **SW.** ¼ **S.** from The East Sister and nearly half a mile from the shore, and between the lines of three fathoms it is very nearly two hundred yards square. The buoy (No. 2) is placed in thirty feet water to the southward of the ledge, and must be left to the northwestward by vessels bound in.

The West Sister.

There is a wide channel with five fathoms water between The West Sister and Horn Island. It is a quarter of a mile wide; but strangers should not attempt it.

Phillips' Rocks are sunken rocks arranged in a reef or line running in a **NW.** and **SE.** direction, and about three hundred yards long. They are nearly a mile **E.** ¾ **S.** from Whale's Back Light-house; a quarter of a mile **SW.** from The West Sister; and half a mile **E.** by **S.** ½ **S.** from the southernmost of the White Islands. These are bad rocks, as they are always covered, (having about nine feet at low water,) and are not buoyed.

Phillips' Rocks.

Five hundred yards **W.** by **N.** from Phillips' Rocks is the eastern end of a bad ledge, called *White Island Reef,* which extends off from the White Islands in an **E SE.** direction for four hundred yards. It is a sunken ledge with four feet at mean low water, and the shoal of the reef bears **E.** by **S.** ¾ **S.** from Whale's Back Light-house, distant half a mile.

Three sunken ledges, extending over a space of a little more than a quarter of a mile, with good water between them, are called Kitt's Rocks. The easternmost, a small round rock, has eleven feet at mean low water, and lies a quarter of a mile **S.** ½ **W.** from the southernmost White Island, three-quarters of a mile **W.** by **S.** ¾ **S.** from the buoy on The West Sister, and half a mile **SE.** ¼ **S.** from Whale's Back Light-house. The middle rock, with fourteen feet, lies four hundred yards **W.** ¼ **S.** from the eastern one, and a quarter of a mile **S SE.** from Whale's Back Light-house. The westernmost rock lies a hundred and fifty yards **N NW.** from the middle one, and has sixteen feet at mean low water. An iron can-buoy of the second class, painted red, and marked No. 4, is placed in six fathoms water off the southern side of the middle rock.

Kitt's Rocks.

PLATE No. 14 B.



COAST
FROM WELLS
TO LITTLE BOAR'S HEAD

Scale Inches

1879

BUOYS

† Red Buoy to be left in entering on Starboard hand
† Black Buoy " " Port
† Black and Red horizontal stripes, Danger Buoy

SOUNDINGS

Soundings in Fathoms at mean low water
Depths less than 5 Fathoms to be set in shoaled surface

Cape Neddick Village
Old York Village
PORTSMOUTH
Rye
Boon I. Ledge
Boon I. LIGHT
Pollock Rock
York Ledge
Thrumcap
Horn's Rock
Bibb Rock
Bald Head Cliff
Nubble Light
Whaleback Light
Whaleback Ledge
Whaleback Reef
Whaleback Shoal
Jerry's Point
Kittery Point
Fort Point
Gerrish I.
Seavey I.
Badgers I.
Clarks I.
Cedar Ledge
Wood I.
Wood I. Ledge
Wood I. LIGHT
Goat I.
Goat I. Ledge
Goat I. LIGHT
Appledore I.
Appledore Ledge
Duck I.
Duck I. Ledge
Star I.
Star I. Ledge
Star I. LIGHT
Smuttynose I.
Smuttynose Ledge
Londons Ledge
Londons Rock
Malaga I.
Malaga I. Ledge
Malaga I. LIGHT
Gosport
Isles of Shoals
Rye Beach Pt.
Rye Beach
Rye Harbor
Rye Harbor Pt.
Rye Harbor Ledge
Rye Harbor Reef
Rye Harbor Shoal
Rye Harbor Bar
Rye Harbor Bar Buoy
Rye Harbor Bar Buoy Ledge
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Rye Harbor Bar Buoy

There is a wide and good channel, with from four to six fathoms water, on the northern side of Kitt's Rocks, between White Islands and Whale's Back on the north and these rocks on the south; but it is not safe for strangers, who, of course, cannot be acquainted with the extent of the ledges.

Frost Point Ledge.

When past Kitt's Rocks the channel turns to the northward and there are no channel obstructions; but vessels beating in or out must not stand over towards Frost Point too far, but must give that point a berth of at least six hundred yards to clear Frost Point Ledge, a long ledge, bare at low water, which makes off from the shore just to the southward of the point, and has two or three bare rocks on its eastern end, three hundred and fifty yards from shore. It is marked by a black spar-buoy (No. 1) placed in three fathoms on the eastern point of the shoal.

Jerry's Point Ledge.

Vessels bound into Little Harbor leave the buoy on Frost Point Ledge to the southward, passing midway between it and the red beacon on Jerry's Point Ledge. **Jerry's Point** is the southeastern end of Great Island, and is a round bare headland of moderate height and steep on its eastern face. (See page 505.) A hundred yards **S.** by **W.** from it is a bare rocky islet, upon which is built an iron beacon composed of a centre shaft and six inclined braces, with the top lozenge-shaped and the letters "L. H." in front. It is known as **Jerry's Point Beacon**, and the rocky islet upon which it is built is the southern extremity of the ledge.

Vessels bound into Little Harbor leave Jerry's Point Beacon to the northward, about a hundred and fifty yards off; while those bound to Portsmouth do not come near it unless they are beating up or are close-hauled on the western side of the channel. In such cases they must not approach the beacon nearer than three hundred yards.

Stielman's Rocks.

The eastern shore of Great Island must not be approached more closely than three hundred and fifty yards until you are up with Stielman's Rocks, which extend off from the shore of Great Island three hundred yards,—the eastern point of the ledge being **S.** ½ **W.** from Portsmouth Light-house, exactly a quarter of a mile distant. An iron nun-buoy of the second class, painted black, and marked No. 3, is placed in five fathoms on the eastern end of the ledge, and there is no passage inside of it.

On the eastern side of the channel Wood Island must receive a berth to the eastward of three hundred yards; and vessels in beating must not, after passing above the island, approach the shore of Gerrish's Island nearer than a quarter of a mile until they are near the Fishing Islands. A good rule is, for the eastern side of the channel, not to go to the eastward of Whale's Back Light-house, bearing **S.**, or not to bring that light in range with Wood Island, but to go about as soon as the light-house is nearly on with the western point of that island. For the western side of the channel, do not stand to the westward of Portsmouth Light-house, bearing **N.** by **E.** ¼ **E.**, until you are nearly up with Stielman's Rocks.

Fishing Island Ledge.

Fort Point may be passed closely, as it is quite bold-to; and when abreast of it there will be seen to the northward, off the mouth of Pepperell's Cove, a red buoy near the Fishing Islands. This buoy is on Fishing Island Ledge, which extends off from the upper of the two islets in a westerly direction, and is bare at low water. It is marked by a red spar-buoy (No. 6) placed in thirty feet on its western end. This buoy is also a guide to the anchorage in Pepperell's Cove and may be passed close-to.

Cod Rock.

Bearing about **W NW.**, and about a mile and a quarter off when you are abreast of Fort Point, a black spar-buoy will be seen. This is on Cod Rock, a sunken ledge with sixteen feet at mean low water, which lies two hundred and fifty yards **NW.** from the extreme northeastern angle of Fort Constitution and about two hundred yards from shore. The buoy is marked No. 5, and is off the northeastern point of the ledge in five fathoms water. Vessels bound to Portsmouth leave this buoy an eighth of a mile (two hundred and fifty yards) to the southwestward. Those intending to anchor in the cove on the western side of the fort pass to the northward and westward of it and close-to, round it and steer in about **S SW.**, anchoring according to draught. If bound up to the wharves at the **Fort Landing**, you must gradually haul up towards them, using the lead as a guide. Four feet only at low water can be carried up to the longest pier.

Goat Island Ledge.

After passing Cod Rock there are no obstructions until you are past Clarke's Island, when there will be seen, on the southern side of the channel, a black spar-buoy off Goat Island. This buoy is marked No. 9, and is placed on the northern point of Goat Island Ledge, which makes off from the western end of Goat Island in a northerly direction. You must give it a berth to the southward of not less than thirty feet.

South Beacon Shoal.

After passing Fort Washington, the first obstruction met with is South Beacon Shoal, extending off to the eastward in the vicinity of One-Tree Island, with its eastern extremity a quarter of a mile from the wharf-line of the city of Portsmouth. On its dry part, four hundred yards from the shore, is built a beacon of grey stone, eighteen feet square and twenty feet high, surmounted by a mast painted black, with a lozenge-shaped figure on top. This is called **South Beacon**, and is to receive a good berth to the westward. The western edge of the channel is marked by a black spar-buoy (No. 11), which is placed on the eastern extremity of South Beacon Shoal in four fathoms at mean low water. South Beacon bears from One-

Dangers--Portsmouth Harbor. Tree Island E. ¾ N., nearly three hundred yards distant; from the northeastern angle of Fort Washington (on Peirce's Island) NW. by N., between five and six hundred yards; and W. by S. ½ S. from the southernmost ship-house in the Navy Yard, five hundred yards distant. The buoy is one hundred yards E. from the beacon.

When abreast of the buoy on South Beacon Shoal, a spar-buoy, painted red and black in horizontal stripes, will be seen ahead and two hundred yards distant. This buoy is placed on the northern side of Gangway Rock, which has fifteen feet at mean low water and thirteen at low spring tides, and lies almost exactly in the middle of the channel, with deep water on all sides. It bears NE. by N. ¾ N. from South Beacon, distant one hundred and seventy-five yards, and vessels of heavy draught must give the buoy a berth of fifty yards on either hand to avoid the rock. Others may pass close to the buoy without danger, as there is never less than thirteen feet on the rock.

Gangway Rock.

North Beacon Shoal. North Beacon Shoal surrounds Pumpkin Island; and on the islet is erected a wooden mast twenty-five feet high, with four diagonal braces, and a lozenge-shaped figure on top,—the whole painted red. This is called **North Beacon**, and is to be left to the northward; and it bears N. ¼ W. from the South Beacon, distant four hundred yards.

Seward's Rocks is a small ledge lying one hundred yards NW. from One-Tree Island and about one hundred and thirty yards off the wharf-line of the city. It has seven feet at mean low water, and is marked by a black spar-buoy (No. 13) placed in eighteen feet water to the northward of the ledge. This buoy is approached only by vessels going alongside the wharves.

Willey's Ledge extends off due S. from the eastern end of Badger's Island, (formerly called **Willey's Island**,) and has upon its dry summit an iron spindle, painted red, and surmounted by a copper cylinder and gilt ball. It is one hundred yards to the southward of Badger's Island and three hundred W. by N. from North Beacon; and the passage between the two beacons to the anchorage S. of Squash Island leads close along the eastern end of this ledge in a NE. direction. This anchorage is, however, never used by strangers, as the bottom is hard clay.

Willey's Ledge.

Wharf Rock. Wharf Rock lies to the southeastward of the ship-yard on Noble's Island and about fifty yards from shore. It is bare at low water, and is marked by a black spar-buoy (No. 15) placed on its eastern end in three fathoms water. This buoy bears from the long wharf on the southern side of Noble's Island NE. by N. ¾ N., distant one hundred and fifty yards.

Pepperell's Cove is a very commonly used anchorage for light-draught vessels. *Fishing Island Ledge* (already described, page 509) lies on the eastern side of the entrance, and is marked by a red buoy (No. 6). Three hundred yards N. of this buoy, and nearly in the middle of the cove, lies *Logey's Ledge*, which is bare at low water, and is three hundred and fifty yards S SE. from Fort McClary and half a mile NE. by N. ¾ N. from Portsmouth Light-house. There was formerly a spindle here, but that having been carried away the ledge is now marked by a spar-buoy placed to the southeastward of the rock. This buoy, which is painted red and black in horizontal stripes, may be left on either hand, and vessels may anchor on the northern or southern side of the ledge.

Dangers—Pepperell's Cove.

Spruce Creek affords excellent anchorage, but the entrance is narrow and somewhat obstructed; and a black buoy and a red buoy, nearly opposite to each other, mark the limits of the channel. The red buoy, the first met with, is on *Hicks' Rocks*, two large ledges, bare at low water, which extend off to the southwestward four hundred yards from the western end of Kittery Point. The buoy is marked No. 8, and is placed to the southwestward of the ledge in fourteen feet water. The black buoy is on the western side of the entrance, and marks the eastern extremity of *Trefethen's Ledge*, which is nothing but an extension of the southeastern point of Jamaica Island, (formerly called Trefethen's Island.) The buoy, which is marked No. 7, is placed in sixteen feet one hundred and fifty yards from the shore, and must be left to the westward by vessels wishing to enter this harbor.

Dangers—Spruce Creek.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PORTSMOUTH HARBOR.

I. ***Coming from the Northward, alongshore, inside of York Ledge.***—Pass Cape Neddick half a mile off, in fifteen fathoms, and steer SW. ½ S. eight miles, carrying not less than eight fathoms water, until Whale's Back Light-house bears W NW., a mile and three-quarters distant, and Portsmouth Light-house NW. ¾ W., (just open to the southward of the southern end of Gerrish's Island,) two miles and a half distant. Now, having a depth of twelve fathoms, rocky bottom, steer W., carrying not less than seven fathoms water, until Portsmouth Light-house bears N. ¾ W., and you are in eight fathoms, sandy bottom; when steer N. ¾ W. to enter the river. *If bound into Little Harbor*, when, on the W. course, Portsmouth Light-house bears N. ¾ W., steer NW. ¼ W., which will lead you

straight in midway between Jerry's Point Beacon and Frost Point Ledge buoy, carrying nothing less than four fathoms to the mouth of the harbor. Anchor according to draught, in from six to ten feet at low water. *If bound up the river,* steer **N.** ¾ **W.**, carrying not less than seven fathoms, until Whale's Back Light-house bears **SE.** by **E.**, and you are in ten fathoms and are abreast of the southern end of Wood Island. Now steer **N.** ½ **E.**, carrying seven fathoms water, until past Fort Point and Portsmouth Light-house bears **W.** by **S.** ½ **S.**, and you have eight fathoms water. Then steer **NW.**, carrying nine fathoms, until the light-house bears **S.** by **E.**, when anchor in from eight to nine fathoms, hard bottom. This is only good as a temporary anchorage, as the current runs with considerable velocity and the bottom is not of the best. *Or,* when Portsmouth Light-house bears **S.** by **E.**, and you are in eight and a half fathoms, steer **SW.** ¾ **S.**, and anchor close inshore, in the cove to the westward of Fort Constitution, in from three to seven fathoms. *Or, if bound up to the city,* from the above bearing on the **NW.** course steer **W.** ¼ **N.** for Fort Washington, carrying not less than nine fathoms water, until you are off Pull-and-be-damned Point and the two southernmost ship-houses in the Navy Yard open from behind Seavey's Island,—the westernmost house bearing **N.** ¼ **W.** You will now have twelve fathoms, rocky bottom, and must steer **NW.** by **N.** ½ **N.** until South Beacon bears **SW.** by **S.** ⅞ **S.** and the western end of Badger's Island is in range with the inner end of the wharf on Noble's Island. On this course there will be not less than ten fathoms, and at the bearing eleven fathoms. Then steer **W.** by **N.** for the upper end of the city, and anchor abreast of the wharves in from two to eleven fathoms.

Sailing Directions--Portsmouth Harbor.

The above courses pass one mile and a half to the westward of the spindle on York Ledge; one mile and a half to the westward of Murray's Rock; a little over half a mile to the southward of The West Sister; three-eighths of a mile to the westward of Kitt's Rocks; three hundred yards to the eastward of Stielman's Rocks; a quarter of a mile to the westward of Fishing Island Ledge; nearly three hundred yards to the eastward of Cod Rock; seventy-five yards to the northward of Goat Island Ledge; one hundred and fifty yards to the eastward of South Beacon Shoal; seventy-five yards to the eastward of Gangway Rock; and nearly three hundred yards to the northward of Seward's Rocks.

Wishing to enter Pepperell's Cove.—Continue the course **N.** ½ **E.** towards Kittery Point until you are abreast of the red buoy off Fishing Island Ledge. Then haul up **NE.** and enter the cove, passing nearly midway between the buoy and the red and black horizontally-striped buoy on Logey's Ledge, and anchor according to draught, in from two to four fathoms.

Wishing to anchor in Spruce Creek Harbor.—On the course **W.** ¼ **N.** for Fort Washington, when the eastern angle of Fort Constitution bears **SE.** ¾ **E.** and the western extremity of Kittery Point **N.** by **E.**, (in range with the draw in **Spruce Creek Bridge,**) and there is nine fathoms water, steer **N.** by **W.** ½ **W.**, carrying not less than eight fathoms, until you are past the buoy on Hicks' Rocks and about a hundred yards from the buoy on Trefethen's Ledge. The draw in Spruce Creek Bridge will now bear **NE.** by **N.**, and you must steer for it if bound through. This course has nothing less than five fathoms nearly to the draw-bridge. *But, if intending to anchor between Jamaica Island and the main,* steer **NE.** by **N.** for the draw-bridge for about two hundred and fifty yards, or until the northernmost point of Jamaica Island bears **NW.** by **W.**, when steer **NW.** ½ **W.**, carrying not less than four and a quarter fathoms, and anchor when fairly between the island and the eastern point of Kittery Foreside. The depth is four fathoms and the bottom a stiff hard clay.

Intending to anchor between Clarke's and Jamaica Islands.—When the eastern angle of Fort Constitution bears **SE.** ¾ **E.**, with nine fathoms water, (as before,) steer **NW.** by **N.** for the houses on the southern shore of Jamaica Island. On this course there will be four fathoms, and it gives Clarke's Island (which is bold-to) a berth of one hundred and fifty yards. Keep this distance, and as soon as the island is abaft the beam gradually haul to the westward between the two islands, and anchor in four fathoms when the summit of Clarke's Island bears **S.**, or when the wharf on the southern shore of Jamaica Island bears **N.** This is a good anchorage.

II. ***Coming from the Northward, alongshore, outside of York Ledge.***—Bring Boon Island Light-house (see page 512) to bear **E.**, distant a mile and a half, with nineteen fathoms water, and steer **SW.** by **W.**, carrying nothing less than twelve fathoms, until Portsmouth Light-house bears **NW.** ¾ **W.** and Whale's Back Light-house **NW.** by **W.** ¼ **W.**, when there will be twenty fathoms. Then steer **W.**, carrying not less than seven fathoms water, until Portsmouth Light-house bears **N.** ¾ **W.**, when steer for it, and follow the directions given above.

These courses pass a mile and a half to the eastward of York Ledge; a mile and a quarter to the eastward of Murray's Rock; and three-eighths of a mile to the westward of Kitt's Rocks.

DANGERS

IN APPROACHING AND ENTERING PORTSMOUTH HARBOR.

II. ***Coming from Seaward, outside of Boon Island.***—Five miles and three-quarters **SE. ½ E.** from Cape Neddick lies a small low island, called Boon Island, which is but a mass of rock, destitute of all vegetation except grass, and is the site of one of the most important primary sea-coast lights in the United States. Boon Island Light-house is a granite tower one hundred and twenty-three feet high, and shows a fixed white light, of the second order of Fresnel, from a height of one hundred and thirty-three feet above sea-level, visible eighteen miles. The tower is connected with the keeper's dwelling, (which is also of granite,) and its geographical position is

Boon Island and Light-house.

Latitude ..... **43° 7′ 16″ N.**
Longitude ..... **70° 28′ 36″ W.**

It bears from

	Miles.
Seguin Island, SW. ⅞ W.	47 ¼
Cape Small Point, SW. ½ W.	45
Half-Way Rock Light-house, SW.	37 ½
Cape Elizabeth, SW. ¾ S.	29 ¼
Cape Porpoise, S SW.	14 ½
Whale's Back Light-house, E. ¾ N.	10 ½
Hog Island, (Isles of Shoals,) NE. ½ E.	10
Cape Ann, (Thatcher's Island,) N NE. Northerly	29 ½

Three-quarters of a mile **W SW.** from Boon Island Light-house lies Pollock Rock, which has seventeen feet at mean low water and fifteen at low spring tides, and is not buoyed. There is a depth of ten fathoms water between it and Boon Island, but strangers should always give the island a wide berth, and should never attempt to pass between this rock and the light-house. The rock breaks violently in heavy weather, and is a most dangerous obstruction.

Pollock Rock.

Two miles and three-quarters **E. ½ S.** from Boon Island Light-house is a ledge with three feet at mean low water and awash at low spring tides. It is of small extent, bold-to all around, and is called Boon Island Ledge. An iron nun-buoy of the first class, painted red and black in horizontal stripes, is placed in ten fathoms water on the southeastern side of the ledge. From this buoy White Island Light-house (Isles of Shoals) bears **SW.** by **W.** thirteen miles and a quarter, and Thatcher's Island Light-houses **SW.** by **S. ¾ S.**, thirty miles distant. The bottom between Boon Island and this ledge is very much broken,—the soundings varying from four and a half to thirty fathoms; and it is best, therefore, to pass outside of it.

Boon Island Ledge.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PORTSMOUTH HARBOR.

III. ***Coming from Seaward, outside of Boon Island.***—With Boon Island Light-house bearing **NW.** by **W. ½ W.**, distant six miles, and you are in fifty-eight fathoms, White Island Light-house will bear **W.** by **S. ¾ S.**, fourteen and a half miles distant, and, if the night be clear, it will be visible. Then steer **W.** nearly sixteen miles, carrying not less than eight fathoms water, until Portsmouth Light-house bears **N. ¾ W.**, with eight fathoms, sandy bottom. Then steer for that light, and follow the directions previously given. These courses avoid both Boon Island Ledge and Pollock Rock.

At night, bring Portsmouth Light-house to bear **NW. ¾ W.** and run for it until White Island Light-house bears **S.** by **W. ¾ W.**, with twenty fathoms water. Then steer **W.** by **N. ½ N.**, carrying not less than eight fathoms, until Portsmouth Light-house bears **N. ¾ W.**, when run for it, and follow the directions given for the harbor. *During the day* give Duck Island, the northernmost of the Isles of Shoals, a berth to the southward of one mile, (passing it in from eighteen to twenty fathoms,) and steer **W NW.**, carrying nothing less than ten fathoms, until Portsmouth Light-house bears **N. ¾ W.**, when run for it as before.

DANGERS

IN APPROACHING AND ENTERING PORTSMOUTH HARBOR.

III. ***Coming from the Southward and Eastward, south of the Isles of Shoals.***—A vessel bound to Portsmouth from Cape Ann, or from the southeastward, steers to the northward about fifteen miles, when the **Isles of Shoals** will be seen to the northeastward about five miles distant. These islands will appear as a group of small rocky islets, bare of trees, and of various heights, lying five miles off the coast of New Hampshire and six miles from Portsmouth Entrance. Here and there will be seen houses crowded somewhat thickly together; and on approaching the islands more closely a glimpse of the large hotel on Hog Island may be obtained if the day be clear.

The most prominent object, advancing to the northward, will be White Island Light-house, which is often called **Isles of Shoals Light-house.** It is built on the southeastern end of White Island, (the southernmost islet of the group,) and will show as a white tower, with a covered wooden way, also white, extending in a northerly direction nearly to the keeper's dwelling, which is built fifty yards **N.** of the light-house. The island is about forty feet high at the site of the tower, is entirely bare of vegetation, and lies nineteen miles **N.** ¼ **E.** from Thatcher's Island, and a little over six miles **S.** by **E.** ½ **E.** from Whale's Back Light-house. The light-house is forty feet high, and shows a flashing red and white light (with intervals of thirty seconds between) from a height of eighty-seven feet above sea-level. The lens is of the second order of Fresnel, and shows every alternate flash red; and is visible fifteen miles at sea, around the entire horizon, except on a bearing of about **NE.**, when it is eclipsed by the Oceanic House on Star Island. Its geographical position is

White Island and Light-house.

Latitude	**42° 58′ 0″ N.**
Longitude	**70° 37′ 25″ W.**

Nearly half a mile due **N.** from White Island is Lunging Island, which is nothing but a mass of bare rock, destitute of all vegetation, lying nearly **N.** and **S.**, and about three hundred yards long. A bare islet a hundred yards square lies two hundred and fifty yards **W.** from this island, and is called **Square Rock.**

Lunging Island.

To the southwestward of White Island, four hundred yards distant, is **White Island Ledge,** bare at low water, and surrounded by sunken rocks, with good water between it and the island. Nearly four hundred yards **W.** from the centre of White Island extends a bad ledge, which terminates in a bare rock. This is **West Ledge,** and is half a mile due **S.** from Square Rock.

Half a mile **NE.** from White Island Light-house is the southern end of a high rocky island, called Star Island. The southern end is a bluff forty or fifty feet high, and the land rises behind it to a height of nearly seventy feet,—the surface being bare of all vegetation except grass. On the northern side of Star Island is situated the settlement of the **Isles of Shoals,** consisting of a group of dwelling-houses, a hotel and a church. This island, which lies **N.** by **E.** and **S.** by **W.**, is of irregular shape and six hundred yards long, and from Lunging Island it bears **E.** by **S.** one-third of a mile distant.

Star Island.

There is a wide and unobstructed passage between Star and White islands, and also between White and Lunging islands. The passage between Star and Lunging islands is a quarter of a mile wide, but is obstructed by a group of sunken rocks, called Half-Way Rocks, which have three feet at low water, and are marked by a spar-buoy, painted red and black in horizontal stripes, placed on their southern side. These rocks lie at the northern end of the passage, exactly midway between the two islands. There is another very dangerous sunken rock obstructing this passage, with only six feet at mean low water, lying about one hundred and fifty yards **NW.** by **W.** ½ **W.** from the northwestern point of Star Island, and exactly half-way between it and Half-Way Rocks. It has deep water all around it and is not buoyed.

Half-Way Rocks.

Three-quarters of a mile **SE.** by **S.** ¾ **S.** from the southern end of Star Island, and a mile **SE.** by **E.** ½ **E.** from White Island Light-house, is Anderson's Ledge, which is bare at low water, surrounded by sunken rocks, and always shows itself by breakers. Vessels coming from the eastward and intending to pass to the southward of White Island Light-house must take special care, if at night, not to get to the northward of the light-house bearing **NW.** by **N.**, so as to avoid this ledge.

Anderson's Ledge.

One-eighth of a mile **ENE.** from Star Island is Cedar Island, a low rocky islet, bare of all vegetation except near its western end, where there is some grass and a few bushes. It is about three hundred yards long; and a ledge of rocks, dry at low water, connects it with Smutty-nose Island, two hundred and fifty yards to the northward.

Cedar Island.

Seven hundred yards **SE.** by **E.** from Cedar Island is a ledge, bare at low water and with deep water all around it, called **Cedar Island Ledge.** In day-time vessels may safely pass inside of this shoal, as there is a deep and unobstructed channel, with ten fathoms water, between it and the islands.

There is no safe passage between Star and Cedar islands,—the channel being closed by a bar with six feet at low water.

Smutty-nose Island is an eighth of a mile **N.** from Cedar Island and four hundred yards **N.** from Star Island, and is long and narrow, lies **E.** and **W.**, and is half a mile long. A small hillock on its eastern end is twenty feet high, but the rest of the island is low and bare of trees.

Smutty-nose Island. At its western extremity the land is cleared and occupied by a group of houses, and here is a small shallow cove, called **Haley's Cove**, forming a harbor for very light-draught vessels; and there is a good and deep anchorage, affording shelter in winds from **N NE.** to **SE.**, contained between Smutty-nose, Cedar and Star islands. There is also shelter in **NW.** winds under the southern shore of Smutty-nose Island, on the eastern side of the ledge which connects it with Cedar Island; but vessels must anchor close in to the shore.

Three hundred yards **N.** of the western end of Smutty-nose Island is the largest of the Isles of Shoals, called Hog Island, which is high, lies nearly **N.** and **S.**, and is half a mile in length. It is sixty feet high, quite steep on its southern shore, and entirely bare of trees. Near

Hog Island. the centre of the island, but on the western shore, in the valley, is built the **Isles of Shoals Hotel**, a summer resort, much patronized during the season. The shores of Hog Island are quite bold-to except on the southern side, where a ledge, bare at low water, makes off in a southerly direction nearly two hundred yards,—the channel between it and Smutty-nose Island being thus contracted to a width of less than a hundred yards. The best water is nearest to the latter island.

The northernmost islet of this group, called Duck Island, lies a little over three-quarters of a mile **N NE.** from Hog Island, and is low and bare of trees. It is about two hundred and fifty yards long and surrounded by bare ledges, which extend five hundred yards in every direction

Duck Island. from it. This islet should never be approached more closely than half a mile, unless a vessel be bound through between it and Hog Island, where there is a passage half a mile wide, with thirteen fathoms water, and entirely unobstructed. The best water is about in the middle of the passage. Duck Island is five miles **SE.** $\frac{1}{2}$ **S.** from Whale's Back Light-house and nine miles **SW.** $\frac{1}{2}$ **W.** from Boon Island.

The ledges on the eastern side of Duck Island are known as **Shag Rock, Eastern Rocks** and **Mingo Rock,**—the last named being the southernmost; and on the western side is **Southwest Ledge.** All of these are bare at high water, but are surrounded by sunken rocks.

Gunboat Shoal is the first danger met with in approaching Portsmouth Harbor from the southward after passing the Isles of Shoals, and has three and a half fathoms upon it. It

Gunboat Shoal. is nearly three miles **S.** $\frac{1}{4}$ **W.** from Portsmouth Light-house, one mile and a quarter **S.** by **E.** from Odiorne's Point, and the same distance from the nearest shore. From White Island Light-house it bears **NW.** by **N.**, four miles and three-quarters distant.

Kitt's Rocks, very dangerous sunken ledges, (which have been already described on page 508,) are common to all the channels into Portsmouth Harbor. The middle and western-

Kitt's Rocks. most rocks are, however, the only ones which obstruct the entrance from the southward. They are marked by an iron can-buoy of the second class, painted red and marked No. 4, which is placed in six fathoms water off the southern end of the middle rock, and bears **S SE.** from Whale's Back Light-house, distant a quarter of a mile. The westernmost rock lies two hundred yards **N NW.** from it.

Here all the channels unite in one, and the dangers common to all are described on pages 509–510.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PORTSMOUTH HARBOR.

IV. ***Coming from the Southeastward, south of the Isles of Shoals.***—Bring White Island Light-house to bear **NW.** by **N.** $\frac{1}{2}$ **N.**, five miles distant, when, with about forty fathoms, Boon Island Light-house will bear **N NE.**, thirteen and a half miles distant, and will be visible on a clear night. Then steer **NW.** $\frac{3}{4}$ **W.**, carrying not less than twenty-five fathoms, until White Island Light-house bears **NE.** by **N.**, when Portsmouth Light-house will bear **N.** $\frac{3}{4}$ **W.**, and you will have twenty-five fathoms, green mud and fine sand. Now steer for the light, which will lead you safely in. *In the day-time*, give White Island a berth of two miles to the northward, passing it in twenty-five fathoms, and when the light-house bears **NE.** by **N.** steer **N.** $\frac{3}{4}$ **W.**, as before.

These courses pass two miles and a quarter to the southward of Anderson's Ledge; a little over a mile to the westward of White Island Ledge; half a mile to the eastward of Gunboat Shoal; and three-eighths of a mile to the westward of Kitt's Rocks.

V. ***Coming from the vicinity of Cape Ann.***—From a position two and three-quarter miles **E.** of Thatcher's Island, with thirty-eight fathoms, grey mud, steer **N.** $\frac{1}{2}$ **W.** nearly twenty miles, carrying not less than twenty fathoms, until White Island Light-house bears **E.**, a mile and a quarter off, and you are in twenty-three fathoms, soft sand. Then steer **N.** $\frac{3}{4}$ **W.** for Portsmouth Light-house, carrying not less than eight fathoms, and following the directions given on pages 510–511.

VI. ***Coming from the vicinity of Newburyport.***—With Newburyport Light-house bearing **W.** by **N.** ¼ **N.**, a mile and a half distant, and you are in nine fathoms, steer **NE.** ½ **N.**, carrying not less than eight fathoms, until Portsmouth Light-house bears **N.** ½ **W.**, with fourteen fathoms water. Then steer for the light and follow the directions for the harbor. The course from off Newburyport Light-house leads alongshore at an average distance of three miles from it.

LIGHT-HOUSES.

Name.	Latitude.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		m. s.	Feet.	
Boon Island Light-house	43 7 16	70 28 36	4 41 54.4	Fixed.	.....	133	18
Portsmouth Light-house	43 4 14	70 42 32	4 42 50.1	Fixed.	.....	70	14
Whale's Back Light-house	43 3 30	70 41 48	4 42 47.2	F. V. F.	1 30	58	13
White Island Light-house, (Isles of Shoals.)	42 58 0	70 37 25	4 42 29.7	Flashing red and white.	0 30	87	15

TIDES.

Corrected Establishment	$11^h\ 23^m$
Mean Rise and Fall of tides	8.6 ft.
Mean Rise and Fall of Spring tides	9.2 ft.
Mean Rise and Fall of Neap tides	8.2 ft.
Mean duration of Rise	$6^h\ 20^m$
Mean duration of Fall	$6^h\ 5^m$
Rise of highest tide observed	11.5 ft.

CURRENTS.

The tidal current is very strong in Portsmouth Harbor, and vessels must, when possible, anchor on the shallows to avoid its strength. The current of both flood and ebb sets strongly upon Fort Point owing to the abrupt turn in the channel of the river at that point, and vessels must beware accordingly. No detailed observations of currents have been made in this harbor.

VARIATION OF THE COMPASS.

The magnetic variation for 1879, at Kittery Point, is 12° 15′ W., and at the Isles of Shoals it is 11° 48′ W. The annual increase is about 3′.

ICE IN PORTSMOUTH HARBOR.

In this harbor the ice formations, which are purely local in their character, are rarely sufficiently heavy to become an absolute obstruction to navigation below the Portsmouth, Saco and Portland Railroad Bridge; but drift-ice is sometimes met with which renders the movements of vessels difficult and dangerous. During the severe winter of 1874–75 the ice extended out as far as the channel-way, but the channel itself was unobstructed except by masses of drift-ice,—the greater portion of which had come down from above the bridges, where the formations were quite heavy and extensive. Steamers were at no time prevented from entering or leaving the harbor, but sailing vessels could not navigate without the assistance of a tug-boat during the greater part of the month of February; and vessels lying alongside the wharves were also liable to serious injury from the floating masses of drift-ice. The outside approaches to Portsmouth were not at all obstructed, as the drift-ice rapidly disappeared soon after leaving the upper part of the harbor. Upon three occasions only has this noble harbor ever been completely frozen over within the memory of the oldest inhabitants, and these occurred during the winters of 1811, 1817, and 1857,—the most serious obstruction taking place in the first-mentioned year, but lasting only two days. It will be seen from this that, although the winter of 1874–75 was an exceptionally severe one, the formations were not so extensive or so much of an obstruction to navigation as had previously occurred in other years.

The influence of the winds on local formations and on the movements of drift-ice are entirely overcome if opposed by the strong tidal currents flowing through the harbor. The current of ebb is very effective in preventing the formation of solid ice and also in carrying the drift-ice out to sea, but the ingress of vessels is very hazardous during its flow owing to the danger of being *cut through* by the floating masses of drift-ice. The effect of the flood tide is to hold the broken ice in the harbor; and local formations occur more frequently and increase more rapidly during its flow than at any other time.

COAST FROM PORTSMOUTH ENTRANCE TO NEWBURYPORT HARBOR.

From Odiorne's Point the general course of the coast is **SW.** ½ **S.**, ten miles, to the entrance to Hampton Harbor, and then **S.** by **W.**, five miles, to Newburyport Entrance. The coast-line is much indented, but there are no harbors of any importance between Portsmouth and Newburyport. The approaches are very gradual, and, as a general rule, a vessel may approach within a mile of the shore anywhere between Gunboat Shoal and Great Boar's Head, near Hampton.

Three miles **SW. ¼ S.** from Odiorne's Point is a low grassy point, with a couple of houses near its eastern end, bare of trees and backed by marsh or salt-meadow lands. This is Ragged Neck Point, the northern point of entrance to Rye Harbor. The shore between Portsmouth and this point presents the appearance of a succession of sand beaches, separated by outcropping ledges of rocks jutting out into the sea. The beach is backed by salt-meadow, behind which the land rises very slowly and regularly, and well-cultivated and thickly settled strips of woodland intersect the cleared lands here and there. On approaching Ragged Neck Point the village of **Rye** will appear about a mile back from the shore.

Ragged Neck Point.

Rye Harbor is an indentation in the shore-line a little over three miles **SW. ¼ S.** from Portsmouth Entrance. It is an arm of the sea running in a **NW.** and **SE.** direction for a third of a mile, and is a quarter of a mile wide at its mouth, gradually decreasing in width to its western end, where it terminates in a crooked and narrow slue running into the salt-meadow. This harbor is almost entirely bare at low water, and is of no importance. Its southern point of entrance, called **Verrill's Point,** is a low sandy point with a number of houses on it, and a line of bathing-houses stretched along the beach. This point is separated by salt-meadow from **Locke's Point,** which is entirely cleared and under fine cultivation. On its summit, which is twenty feet high, a group of houses will be seen, and its extremity is entirely bare of trees except a few fruit trees.

Rye Harbor.

Just to the southward of Locke's Point will be seen a large building with cupola, surrounded by many smaller houses; and the beach in front, white and broad, is dotted with bathing-houses. The large building is the **Ocean House,** the principal sea-side hotel of **Rye Beach.** The country on both sides and back of it will appear as partly wooded but mostly cleared and cultivated lands, thickly dotted with houses. At this point there is **a life-saving station,** provided with all appliances for rendering assistance to shipwrecked navigators.

From Locke's Point to Little Boar's Head the course of the shore is **SW. ¼ S.,** and the distance two miles and a half. The shore presents the same general features,—low lands, mostly cleared, well cultivated and thickly settled. One mile and a quarter **SW.** from Locke's Point is a low point, partly wooded and partly under cultivation, called Jenness' Point. It has quite a number of houses upon it, and a long ledge, bare at low water, called **Rye Ledge,** makes out from it in an **ESE.** direction for a third of a mile. On this point are situated the "**Farragut**" and "**Sea View,**" two sea-side hotels, which show very prominently from any point of view to the southward of Rye Ledge.

Jenness' Point.

Little Boar's Head, six miles below the entrance to Portsmouth, is a grassy headland forty feet high, with a precipitous face, bare of trees, dotted with houses, and mostly under cultivation. Just to the northwestward will be seen the houses in the village of **North Hampton.**

Little Boar's Head.

From Little Boar's Head the coast-line runs **S SW.** for a little over two miles and a half to a high headland, called Great Boar's Head, which is bare of trees and covered with houses. Its eastern face is precipitous, forming a cliff forty feet high. This point is also a great summer resort, and there are several hotels on and near the head. The village of **Hampton** is situated a mile and a half to the northwestward of Great Boar's Head. The shore between the Little Boar's Head and this head presents the appearance of a fine white beach, dotted here and there with bathing-houses and backed by marsh or salt-meadow. The lands back of the meadow-land are partly cleared and in some places thickly wooded until near the Great Head, and the village of Hampton is seen. From the entrance to Portsmouth this head is eight miles and three-quarters distant.

Great Boar's Head.

From the eastern extremity of Great Boar's Head the shore-line takes a turn about **W.** by **N.** for half a mile, forming the southern side of the head, and then turning abruptly runs **SW.** by **S. ¼ S.** for a mile and a quarter to the entrance to Hampton River or **Hampton Harbor.** This river empties into the sea about a mile and a half to the northward of the boundary-line between New Hampshire and Massachusetts. Its shores are entirely salt-meadow, which in summer will be seen dotted with haycocks in every direction. It is almost entirely bare at low water,—the channel being then a mere thread with one or two feet in it.

Hampton River.

From the mouth of Hampton River an almost unbroken line of beach extends **S.** by **W.** for four miles and three-eighths to the entrance to Newburyport Harbor, which is situated at the mouth of the Merrimac River.

DANGERS

ALONG THE COAST BETWEEN PORTSMOUTH AND NEWBURYPORT.

Gunboat Shoal, before described in the approaches to Portsmouth Harbor, is nearly three miles **S. ¼ W.** from Portsmouth Light-house, a mile and a quarter **S.** by **E.** from Odiorne's Point, and the same distance from the nearest shore. It has three and a half fathoms at mean low water.

A little over half a mile below Odiorne's Point, and three hundred and fifty yards from the shore, is a ledge dry at low water; and a quarter of a mile to the southward is another, also bare at low water. These are called Seal Rocks and always show themselves by breakers. Shoal water extends from the bare rock to a distance of a quarter of a mile from the shore.

Seal Rocks.

Nearly one mile **NE.** by **E.** from Ragged Neck Point is a ledge or reef of rocks, known as Foss' Ledges, lying seven-eighths of a mile **S SW.** from the southernmost of the Seal Rocks and a third of a mile from shore. They are bare at half-tide and surrounded by sunken

Foss' Ledges.

ledges; and extend, with the shoals around them, seven hundred yards in a **NE.** and **SW.** direction. Vessels should not approach the shore at this point nearer than a mile.

As a general rule the coast hereabout should always receive a berth of a mile, and this will lead clear of all of these ledges. At Rye Beach the approach is gradual and the lead may be relied on; but at Jenness' Point makes out the long bare ledge known as Rye Ledge, bare at low water, and seven hundred yards long. The shore should here receive a berth of a mile at least, as there is a depth of only four fathoms two-thirds of a mile from the point. The approach is gradual, however, and vessels should use the lead, and go about in six fathoms. ***Rye Ledge.***

One-third of a mile from the shore, and abreast of Little Boar's Head, lies a ledge bare at high water and surrounded by shoals. It is called **Bare Ledge**, always breaks, and there is no passage inshore of it.

Seven hundred and fifty yards **S SW.** from Little Boar's Head, and a quarter of a mile from shore, is Godfrey's Ledge, bare at low water, with no passage inshore of it. None of these ledges are in the way of vessels bound up or down this coast unless beating to the windward, when the usual rule is, as stated above, to go about when a mile from shore. This will avoid all dangers until they are past Great Boar's Head. ***Godfrey's Ledge.***

Great Boar's Head Ledge, which has five feet water, lies a third of a mile **NE.** from Great Boar's Head and about five hundred yards from shore, and is not buoyed. Vessels approaching the head should not go inside of nine fathoms.

The approaches to Hampton River are obstructed by many ledges, the most easterly of which are called Hampton Ledges. These ledges are two, lying **NE.** and **SW.** from each other, at a distance of a quarter of a mile. The northernmost ledge is bare in some places at half-tide and in other parts awash at low water. It is a mile from shore, lies due **E.** from the mouth of Hampton River, and is nearly seven hundred yards long and a quarter of a mile wide. A quarter of a mile **SW.** from this ledge is the southernmost rock, which lies half a mile from the southern point of the entrance to the river, and is also bare at half-tide in several places. It forms a reef or ledge five hundred yards long and in many places bare at low water. Neither of these ledges is buoyed; and the channel into Hampton River leads to the northward of them, towards a group of islets lying in the middle of the entrance and called **Town Rocks.** ***Hampton Ledges.***

A quarter of a mile **W.** from the northernmost of the Hampton Ledges lies a small ledge called the Old Cellar Rock. It is awash at low water and bare at low spring tides, and is nearly half a mile due **E.** from Town Rocks. There is good water all around it and between it and Hampton Ledges, but it is not buoyed. ***Old Cellar Rock.***

Two miles **S.** from the entrance to Hampton River and two-thirds of a mile from the beach is *a ledge with nine feet at mean low water and about seven at lowest tides.* To avoid this, and also the Hampton Ledges, vessels must not approach the shore nearer than a mile and a quarter. Or, at night, they should go about as soon as they strike eleven fathoms.

NEWBURYPORT HARBOR.

This harbor lies at the mouth of the **Merrimac River**, near the northern boundary of Massachusetts, and the entrance is in

Latitude ..... **42° 49′ 30″ N.**
Longitude ..... **70° 48′ 10″ W.**

It bears from

	Miles.
Cape Elizabeth, SW. ¼ S.	51
Portsmouth Entrance, SW. by S. ¼ S.	14
Isles of Shoals Light-house, SW. ¾ W.	11½
Cape Ann, (Halibut Point,) NW. by N.	10½
Annisquam Light-house, N. by W. ¼ W.	11
Ipswich Entrance, N. ¼ W.	8

The mouth of Merrimac River, which is a quarter of a mile wide, is contained between Salisbury Point (the southern end of Salisbury Beach) on the north and Plum Island Point on the south; and the entrance is a shifting sand-bar, upon which there is only four feet at low water. The town of Newburyport is built upon the southern bank of the river, a mile and three-quarters above its mouth.

Plum Island Point is the northern extremity of Plum Island, which is a long low island (composed almost entirely of sand and salt-meadow) extending from Newburyport Entrance to Ipswich Entrance, seven miles to the southward. The beach is covered with innumerable sand hillocks, some of which have a scrub growth, but the majority have only thin wiry grass; and here and there a few trees will show over the hillocks. Plum Island is separated from the mainland by Plum Island River, which empties into Plum Island Sound, forming the harbor of Ipswich. **Plum Island Point.**

On the extremity of Plum Island Point is built a light-house called Newburyport Light-house,—an octagonal wooden tower, thirty-five feet high, showing a fixed white light, of the fourth order of Fresnel, from a height of fifty feet above sea-level, visible twelve miles. Its geographical position is **Newburyport Light-house.**

Latitude..... 42° 48′ 25″ N.
Longitude..... 70° 49′ 6″ W.

In front of it, three hundred feet distant, is placed on the sand-spit a small square beacon or house for a range light. It is twenty feet high, and shows a fixed white light from a height of twenty-five feet above sea-level, visible eight miles. This beacon is movable, and is shifted as the channel changes so as always to give a range over the bar.

Upper Harbor Beacons. Two beacon lights were built in the upper harbor in 1873, as a range for the course up to town. They are a little over a hundred yards apart in an **E. ¼ N.** and **W. ¼ S.** direction,—the easternmost being on the extremity of one of the wharves near the lower end of the town. The course for them leads in the best water between the North Pier and South Pier.

On Plum Island, a little over a mile to the southward of the lights, is the hotel, built on the summit of the beach, and quite a prominent object. A turnpike, which crosses Plum River on a bridge of piling, connects this hotel with the town.

To the westward of the entrance the river spreads out to the southward, forming a large bay or cove, altogether dry at low water. The flats, called **Joppa Flats**, occupy nearly all of this bay, and are covered with grass, which extends nearly to the edge of the channel. Two marsh islands lie on these flats close to the southern bank of the river,—the largest of which is called **Woodbridge's Island.** The smaller, two hundred yards to the southwestward of Woodbridge's Island, is called **Seal Island**, and lies in the northern mouth of Plum Island River. At high water there is a shallow channel between these two islands into Plum Island Sound. Woodbridge's Island was formerly connected with Plum Island by a breakwater,—the ruins of which may yet be seen.

Joppa Flats.

The general course of the Merrimac River from its mouth to Newburyport is **W.** between low marshy banks. On the northern or Salisbury side cultivated and thickly settled land will appear back of the salt-meadows,—the cleared lands intersected by narrow strips of woodland comprising a variety of trees. On the southern or Newburyport shore low cleared lands, thickly settled and highly cultivated, extend from the western edge of the salt-meadows to the town. A thick grove of oak, birch and other trees separates the firm land from the marsh; and orchards dot the surface of the cultivated grounds to the very edge of the town.

At the eastern end of Newburyport the course of the river gradually changes to **NW.**, which it continues past the town and its western suburb of Belleville to Eagle Island, a mile and a quarter above the town.

Near the western end of Newburyport the river is crossed by a bridge, over which passes the Eastern Railroad,—the draw being near the southern end of the bridge, close to the wharf-line. Half a mile above, and near the northeastern bank, is a small island, mostly marshy, but wooded on its western end, called Ram Island; and one hundred yards west of it is a larger island, part of which is cleared and cultivated, called **Carr's Island.** It occupies the middle of the river, opposite to **Belleville**, and is half a mile long; and there are a few trees on the edge of the cultivated ground.

Ram Island.

Three-eighths of a mile above Carr's Island is Eagle Island, low and thinly wooded; and two hundred yards **W.** from it is another, called **Deer Island**, lying **E.** and **W.**, and nearly a quarter of a mile long. It is thinly wooded and has a group of houses on the western end; and a bridge connects it with both shores of the river.

Eagle Island.

From Deer Island to the mouth of the Merrimac River the distance is four miles and a quarter.

DANGERS

IN APPROACHING AND ENTERING NEWBURYPORT HARBOR.

On approaching this harbor there will be seen to the northwestward a large bell-buoy, painted black and white in horizontal stripes. This is the "Bar Buoy," or "Fairway Buoy," as it is often called, which is placed in five fathoms at low water, and must be run for by vessels coming up with the entrance. The other buoys which indicate the dangers in the approaches are not marked upon any of the published charts, for they are moved as the channel shifts.

Newburyport Harbor is not fit for strangers, as the bar cannot be crossed without a pilot, and in easterly gales cannot be crossed at all. The first dangers met with are the North and South breakers, which are formed by long sand-shoals making out from Salisbury's Beach and Plum Island. The North Breaker was, in 1878, found to be cut away by the action of the current in the shifting of the channel, so that the best water was about three hundred and fifty yards from Salisbury's Point; while the South Breaker had advanced across the old channel, completely blocking it up; but this state of things may at any time change entirely, and a new channel open either in the old place or in some entirely different direction.

North and South Breakers.

Four feet at the lowest tides may, however, be counted upon over the bar wherever the channel may be. The buoys are shifted by the pilots whenever it is necessary, and thus the site of the channel is made known. The beacon in front of the light-house is also moved so as to be in range with the light and the bar buoys.

After passing the bar an iron can-buoy of the third class, painted black and white in perpendicular stripes, will be seen ahead, which is the "Inner Bar Buoy," and when up with it you have crossed the

bar. This, which is the first buoy met with after passing the entrance buoy, is placed in nine feet at extreme low tides, and must be left close-to on the port hand. When up with it a black spar-buoy will be seen, bearing about **W.** by **N.** ½ **N.** and nearly half a mile off. This is on the eastern end of East Joppa Flats, which are bare at low water. The buoy, which is marked No. 1, is placed on the northeastern edge of the shoal, and must be left to the southward. On the northern side of the channel, nearly opposite to this buoy, will be seen a stone pier with a wooden pyramid on top. This is **Black Rock Beacon**, marking a long ledge making off from the northern shore.

East Joppa Flats.

On the **SW.** extremity of Salisbury's Point, just to the eastward of Black Rock Beacon, is a pier jutting out; and off the end of it is a small bare rock, about twenty yards from shore, called Badger's Rock, and bearing from Newburyport Light-house **N.** by **E.** ¼ **E.**, distant a quarter of a mile, and **NE.** by **E.** ¼ **E.** from the buoy on East Joppa Flats.

Badger's Rock.

Nearly four hundred yards **NW.** by **W.** ½ **W.** from Badger's Rock is a group of rocks, bare at half-tide, lying on the edge of the flats, and called Black Rocks. A pyramidal beacon, painted red, marks the southernmost of the group, and must be left well to the northward. This beacon, which is known as Black Rock Beacon, and has been mentioned above, is erected on a square stone pier fifteen feet high,—the pyramidal structure being thirty-five feet high.

Black Rocks.

Lunt's Rock is a small rock, bare at three-quarters ebb, lying close to the edge of the flats on the northern side of the channel, and three-eighths of a mile to the westward of the Black Rocks. It is marked by a red spar-buoy (No. 2), which is placed in eight feet at mean low water on the southern side of the rock and must be left to the northward.

Lunt's Rock.

When abreast of Lunt's Rock buoy a black spar-buoy will be seen on the southern hand, which is on Joppa Flats. The buoy, which is marked No. 3, is placed on the northern end of a sand-shoal making off from the flats on the southern side of the channel, and is in fourteen feet at mean low water. From the Black Rocks it bears **W.** by **S.**, half a mile distant; and when up with this buoy the course is **W.** ¼ **S.** for the "Upper Mid-channel Buoy," passing a red spar-buoy just before coming to it. This buoy is on *Joe Noyes' Point*, which is the southernmost point of the flats making off from the northern bank of the river, three-quarters of a mile **W.** by **S.** from Lunt's Rock, and one-third of a mile **E.** by **N.** ¼ **N.** from South Pier. The buoy, which is marked No. 4, is placed in four feet on the southern point of the flats.

Joppa Flats.

After passing the buoy on Joe Noyes' Point you will come to a spar-buoy in mid-channel, painted white and black in perpendicular stripes, which is the "Upper Mid-channel Buoy," and is in the best water. It is thus placed to guide vessels clear of Gangway Rock, a sunken rock which had formerly four feet at mean low water and two feet at extreme low tides, but has recently been blasted away to a depth of about seven feet. It is nearly in the middle of the channel, and is not marked otherwise than by this buoy. The rock is a hundred yards **SE.** ½ **S.** from North Pier and two hundred and fifty yards **E.** from South Pier; and to avoid it it is customary to bring the two upper harbor lights in range and run for them. This course leads nearly midway between the North and South piers, and about fifty yards to the northward of Gangway Rock.

Gangway Rock.

A little over two hundred yards **W.** of Upper Mid-channel buoy is a lozenge-shaped pier, built of hewn timber and filled in with stone. It is called North Pier, and is about four feet above high water, marking the northern limits of the channel. The southern limits are marked by South Pier, also of lozenge form, built of hewn timber, filled in with stone, and about four feet above high water. It stands on a sand-spit making off from the western end of Joppa Flats; and the channel leads directly between the two piers.

North and South Piers.

About a hundred yards **SW.** ¾ **S.** from South Pier is *Half-tide Rock*, which, as its name indicates, is bare at half-tide, lying on the western edge of the sand-spit which makes off from the western end of Joppa Flats. There are several smaller rocks near it, also bare at low water; but, as dredging operations have been going on for some time in the immediate vicinity of these rocks, it is probable that many of them will have been removed before the publication of this work.

The Boilers are two sunken rocks close to the end of the custom-house wharf.

The Sow and Pigs is the name given to a large rock with a number of smaller ones near it, lying on the edge of the flats off **Coffin's Point**, on the northern side of the river. The large rock, which is bare at low water, is five hundred yards **NW.** by **W.** from South Pier and a little over a hundred yards **SE.** from the **Ferry Ways** at **Ferry Village.**

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING NEWBURYPORT HARBOR.

Vessels must not attempt to make this harbor except in case of great necessity, as in easterly gales the bar cannot be crossed, and an offing or another harbor must be made. *To approach the entrance from the northward,* steer **SW.** by **S.** ¼ **S.** from near Portsmouth, or **SW.** ¾ **W.** from Isles of Shoals,

Sailing Directions--Newburyport Harbor. until you make the black and white perpendicularly-striped bell-buoy off the entrance to Newburyport. Then bring this buoy in range with the permanent light on Plum Island Point and steer for it. When at the buoy, bring the two lights in range and steer for them, which course will bring you up with the black can-buoy called "Inner Bar Buoy," and carrying not less than four feet water. Leave this buoy to the southward and steer for the black buoy on East Joppa Flats; thence for the black buoy on Joppa Flats; and thence for Upper Mid-channel buoy. When up with this buoy steer, with the two upper beacons in range, midway between the two piers for the anchorage off the town.

It must be borne in mind that the above directions are not to be depended upon for courses. The directions given were correct in 1878; but as the bar is liable to change after every heavy gale, especially easterly storms, mariners must not expect to find the courses given above to be correct. But the outer buoy will always be nearly in range with the permanent light-house and the channel over the bar, and the range of the two lights will always lead over the bar in the best water. Six feet at mean low water, or four feet at lowest tides, is the best water found on this bar. The mean rise of tide is seven feet eight inches, which would give at top of high water (mean tides) a little over thirteen feet on the bar.

Coming from the eastward in day-time, vessels must bring the permanent light to bear W. and run for it until they see the entrance buoy, when run for that, and when up with it the two light-houses will be in range. You may then cross the bar on this range, and proceed as before.

At night, bring the two light-houses in range when you are in not less than twelve fathoms, and run for them until up with Inner Bar buoy.

LIGHT-HOUSES.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Newburyport Light-house	42 48 25	70 49 6	4 43 16.4	Fixed.	50	12
Newburyport Beacon*				Fixed.	25½	8
Upper Harbor East Beacon†				Fixed red.	25	10
Upper Harbor West Beacon†				Fix'd green.	47	12

TIDES.

Corrected Establishment at Newburyport	11h 22m
Mean Rise and Fall of tides	7.8 ft.
Mean Rise and Fall of Spring tides	8.7 ft.
Mean Rise and Fall of Neap tides	7.2 ft.
Mean duration of Rise	5h 16m
Mean duration of Fall	7h 9m
Rise of highest tide observed	10.4 ft.

VARIATION OF THE COMPASS.

The variation of the magnetic needle at Plum Island for 1879 is 11° 50′ W., with an annual increase of about 3′.

LIFE-SAVING STATION.

The United States Government has established on Plum Island, about three miles distant from Newburyport, a life-saving station, which is provided with boats, mortars and other appliances for rendering assistance to the shipwrecked and others who may be in distress.

ICE IN NEWBURYPORT HARBOR.

Formations of ice in this harbor of sufficient strength to become an obstruction to navigation rarely occur, and when they do are composed of drift-ice which has lodged in the channel of the river below the town. This obstruction does not usually remain over twelve hours, but during its continuance the movements of sailing vessels are rendered impossible, unless they are assisted by a tug-boat. Steamers, however, experience but slight difficulty, as they can almost always work their way through. During the winter of 1874–75 the river from Newburyport to the bar was less obstructed by ice than is usually the case, even in moderate winters,—the principal local formations occurring most frequently on Joppa Flats, but not being extensive enough to interfere with the navigation of the harbor.

The largest local formations occur during northerly winds. Westerly winds carry the drift-ice out to sea, and are materially assisted in so doing by the influence of the *ebb tide;* but during their continuance (if strong) the *flood tide* has no effect upon either the local formations or the drift-ice. With the wind from any other direction, however, the current of flood will prevent the floating masses of drift-ice from leaving the river.

* Movable. † On piers near east end of town.

Plum Island (before described) lies between Newburyport Entrance and the entrance to Plum Island Sound, which is an arm of Ipswich Bay. This bay is embraced between the western shores of Cape Ann and the mainland of Massachusetts,—extending from the cape to Plum Island; and between these boundaries it is six miles wide and makes in three miles to the southward. Several small harbors of refuge for light-draught vessels are formed by shallow rivers emptying into this bay. Of these, the most westerly is Plum Island Sound and Ipswich River, which have a common mouth. Nearly three miles to the eastward is Essex River, and two miles to the eastward of this is Squam River or Annisquam Harbor, which empties into the bay where the western shore of Cape Ann joins the mainland. Of these harbors, the first mentioned will be described first in order.

PLUM ISLAND SOUND.

Plum Island Sound (to the southern part of which has been given the name of **Ipswich Harbor**) separates Plum Island from the mainland. Its entrance is between the southern point of Plum Island and a high grassy hill on Castle Neck, which shows a steep face eighty feet high to the northward, and is called **Castle Hill**. The entrance is five-eighths of a mile wide between these two points; and the course of the Sound is nearly **N.**, between Plum Island and the mainland, until it is joined by Plum Island River, which connects it with Newburyport Harbor.

Plum Island.

On the southern end of Plum Island, just at the entrance to this Sound, is a steep hillock between forty and fifty feet high, but bare of trees. The rest of the southern and western shores of this island partake of the general character of the features of the eastern shore, viz: low, sandy and marshy land, with many small sand hillocks near the beach.

Castle Neck.

The mainland on the southern side of the entrance is marked with a range of sand hills and hillocks covering the whole surface of Castle Neck. A fine beach extends along the whole of the sea-face of the neck from the entrance of Plum Island Sound to the entrance of Essex River, a distance of nearly three miles. A few trees show on the higher lands of the neck, nearly **S.** of the light-house.

Ipswich Light-house and Beacon.

On Castle Neck, eight hundred yards **E.** from Castle Hill, are situated the light-towers of Ipswich Entrance. Only the eastern tower is lighted,—the western light having long been discontinued. They are nearly two hundred yards apart, and are placed **E.** and **W.** from each other. The eastern tower is thirty feet high, and shows a fixed white light, varied by flashes once in a minute and a half, from a height of forty-five feet above high-water mark. This light is of the fourth order of Fresnel, and is visible in clear weather eleven nautical miles. In front of this light-house is a movable beacon,—a small square house, painted black,—showing a fixed white light (visible eight miles) from a height of twenty feet. The position of the eastern light-tower is

Latitude	42° 41′ 5″ N.
Longitude	70° 46′ 46″ W.

Castle Hill.

Castle Hill is mostly grass-land, and is about one hundred and twenty-five feet high. Three-eighths of a mile to the westward of it is the mouth of Ipswich River, which may be known by the high, round, grassy hill, with a steep face on the eastern side, which forms the northern point of entrance. The southern side of the entrance is a low sandy point covered with sand hillocks.

Ipswich River.

Ipswich River is very crooked and not navigable until after half-flood. Its general course is **W.** by **S.** and **E.** by **N.**, between low marshy banks; and the town of **Ipswich** is situated on its northern bank, two miles in a straight line above the mouth of the river, but by the river the distance is two miles and three-quarters. Ipswich River is an eighth of a mile wide (two hundred and fifty yards) at its mouth, and gradually diminishes in width until, opposite the town, it is only fifty yards wide, and the channel is a mere thread at low water.

Great Neck.

The high grassy land on the western side of Plum Island Sound, to the northward of the entrance to Ipswich River, is called Great Neck. It is formed by two hills,—one a hundred and twenty and the other a hundred and thirty feet high, covered with grass. The hill at the northern end of the neck shows a precipitous face towards the Sound, and marsh land separates the eastern ends of the two hills.

Great Neck separates Ipswich River from **Green Creek**, a shallow stream, which takes its rise in the salt-meadow half a mile to the northward of the town of Ipswich and flows through a very crooked channel (washing the northern face of Great Neck) into Plum Island Sound, and is of no importance.

Grape Island.

Immediately opposite to the mouth of Green Creek, and nearly in the middle of the Sound, is a long, narrow, marshy island, called **Grape Island**; and there is a narrow passage between it and Plum Island, which is, however, closed at low water. The main channel leads between Grape Island and the mainland.

Rowley's River.

Five-eighths of a mile (twelve hundred yards) above the mouth of Green Creek is the entrance to Rowley's River, a shallow stream, which, like all of the streams on the western shore of Plum Island Sound, flows between marshy banks and through a crooked channel, nearly dry at low water. It is of no importance except for its aid, by means of its numerous arms and branches, in irrigating part of the immense tract of salt-meadow which spreads along the sea-coast from Newburyport to Cape Ann.

Plum Island River.

One mile and three-quarters above the mouth of Rowley's River, and three miles and a half above the entrance to the Sound, the mouths of Plum Island River and Parker's River come together and form the head

of Plum Island Sound. Plum Island River separates Plum Island from the mainland, and its shores are all salt marsh. It joins Newburyport Harbor with Plum Island Sound and is nearly dry at low water.

Parker's River. Parker's River, upon which is built the old town of **Newbury**, is wider and deeper than any other of the streams on the western shore of the Sound. At its mouth it is seven hundred yards wide, but the available channel for entrance is much diminished in width by a marsh island, surrounded by flats, lying exactly in the middle of the passage. The channel is between it and the northern bank of the river. Both shores of this stream are marshy for a mile above the entrance until you are near the village, when both banks show cleared and cultivated lands. The village is situated on the northern bank and is surrounded by cultivated grounds; and a bridge here crosses the river to the hard ground on the southern bank. Over it passes the county road to Ipswich and Cape Ann; and one mile above the county bridge the Eastern Railroad crosses the river over a second bridge, which closes the navigation. The banks above the town are mostly salt-meadows, with some low sand islands scattered over their surface.

DANGERS

IN APPROACHING AND ENTERING PLUM ISLAND SOUND.

The bar at the entrance to Ipswich Harbor is of shifting sand and changes its position with every heavy gale; and the beacon in front of the light-house is moved to correspond with these changes, as are also the buoys on the different sand-spits. The bar should not be crossed without a pilot.

The North Breaker. On approaching the entrance a red spar-buoy (No. 2) will be seen bearing **NE. ½ E.** from the light-house. This is the outer buoy, and is placed on the southeastern point of The North Breaker, a long sand-bar which makes off from the southern end of Plum Island and to the edge of the channel, and is dry in many places at low water. The tail of the spit is constantly shifting its position, and the buoy is shifted accordingly.

The South Breaker. Three hundred yards **SE.** by **S.** from the buoy on The North Breaker will be seen a black spar-buoy (No. 1). This is on the northwestern point of The South Breaker (a sand-bar connected with the shoals making off from Castle Neck) which is bare in some places and breaks almost constantly. The buoy in 1878 was in twelve feet water three hundred yards **SE.** by **S.** from the buoy on The North Breaker,—the channel leading directly between the two buoys. Six feet at mean low water may be taken over this bar.

Inner Spit. When past the bar buoys a red spar-buoy will be seen ahead, which is on the southern point of Inner Spit, a point of the shoal of The North Breaker, extending off to the southward and causing the channel to bend to the westward. The buoy is marked No. 4, and is the last buoy met with in entering the Sound; and when up with it the course leads for Castle Hill.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PLUM ISLAND SOUND.

The best direction for entering this harbor is, when off the bar, in five or six fathoms, to heave-to and make signal for a pilot, (or stand off and on if heaving-to is unsafe,) as the channel shifts so often that no detailed sailing directions are good for a month. As, however, the beacon is shifted so as to be always in range with the main light and the line of best water over the bar, vessels may, if necessity compels, run in on this range. In 1878 the courses over the bar were as follows: When you are in eight fathoms, bring the beacon light in range with the main light, bearing **SW. ¾ W.**, and steer in on that range, passing between the red buoy on The North Breaker and the black buoy on The South Breaker. Then steer **SW.** by **W. ¾ W.** for the buoy on Inner Spit, round it, and steer **SW.** for the light-house until within about one hundred and fifty yards of the beach, which follow at that distance until you come to the bend in the river; *or*, when around Inner Spit buoy, steer for the southern point of Castle Hill. On this course, when the summit of the round hill on the southern point of Great Neck bears **W NW.**, steer for it until within three hundred and fifty yards and you are off the mouth of Ipswich River. Then steer **N.**, and anchor inside of Plum Island in from three to five fathoms water. Not less than five feet may be taken over the bar at low water. If bound up to Ipswich, take a pilot.

The anchorage in Plum Island Sound is not of the best in easterly gales, as the holding-ground is not good and a heavy sea heaves in which often starts the anchors. Vessels have been known to drag as far up as Grape Island from the anchorage off Great Neck.

LIGHT-HOUSES.

Name.	Latitude.	Longitude W.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ″ ″	h. m. s.		m. s.	Feet.	
Ipswich Light-house	42 41 5	70 46 46	4 43 4.4	F. V. F.	1 30	45	11
Ipswich Beacon	42 41 6			Fixed.		20	8

TIDES.

Corrected Establishment	11h 26m
Mean Rise and Fall of tides	8.6 ft.
Mean Rise and Fall of Spring tides	9.1 ft.
Mean Rise and Fall of Neap tides	7.9 ft.
Mean duration of Rise	6h 4m
Mean duration of Fall	6h 21m
Rise of highest tide observed	11.0 ft.

CURRENTS.

Locality.	First Quarter.		Maximum.		Third Quarter.		Flood or Ebb.
	Set.	Drift.	Set.	Drift.	Set.	Drift.	
Off southwestern end of Plum Island	N. by E	1.8	NE. by E. ½ E.	2.1	NE. ¾ N	2.0	Flood.
	S. ¾ E	1.2	SE. by S	1.6	SE. ½ S	1.0	Ebb.
Ipswich Harbor, near Inner Spit buoy	N. by W. ¾ W.	1.4	N	2.9	N	2.1	Flood.
	E SE	2.3	E NE	4.2	E. ½ S	2.0	Ebb.

The bearings are magnetic and the drift is in nautical miles. Vessels crossing Ipswich Bar must be careful of their courses, as the tidal current is strong, especially near Inner Spit buoy. Here the flood-tide, at its full strength, sets right on to the spit with a velocity of three knots, and great care must be taken not to fall off the range of the lights. The ebb-tide sets fairly out of the harbor, about **E NE.**, with a maximum velocity of four and a quarter knots.

VARIATION OF THE COMPASS.

The variation of the magnetic needle for 1879 is **12° 15′ W.**, with an annual increase of about **3′**.

ESSEX RIVER.

Three miles to the southeastward of the entrance to Ipswich Harbor is the mouth of Essex River, which also forms a harbor of refuge for light-draught vessels. The entrance is in

Latitude ..... **42° 40′ N.**
Longitude ..... **70° 43′ W.**,

and is eight hundred yards wide between the southwestern end of Castle Neck (called Point Neck) on the west, and a group of sand-hills (called Twopenny Loaf) on the western end of **Squam Beach**. The channel is very crooked, and the river winds between marshy banks for three miles and a half to the village of Essex. Six feet at low water may be carried over this bar; but the channel is constantly shifting, and no stranger should attempt it without a pilot.

The entrance is between Twopenny Loaf on the east and the eastern end of **Castle Neck** on the west. This point is called Point Neck,—a long, narrow and bare spit of sand, running in a southwesterly direction at right angles to the course of Castle Neck. From the southeastern end of the neck and the southern point of this spit a long flat, bare at low water, makes off in a **S. by W.** direction towards the southern shore of the river. This spit is nearly three-quarters of a mile long, and extends to within two hundred and fifty yards of the southern shore. An iron spindle, painted red, with a ball on top, is placed on a rock, dry at half-tide, off the upper end of Point Neck, and is called **Point Neck Rock Beacon.**

Point Neck.

Passing Point Neck the course leads nearly **S.**,—the land ahead being composed of grassy hills about sixty feet high, backed by higher wooded lands. The eastern bank is entirely salt-meadow, while on the western side you pass the long bare sand-spit called The Middle Ground. This course continues until you are within a quarter of a mile of the southern shore, when it turns abruptly to the westward and skirts this shore, which is now mostly salt-meadow, while ahead is a bare hill sixty-five feet high,—the only high land on the shore. On the northern side of the channel you pass the southern end of The Middle Ground; and the bare hill ahead is on the southern end of a marshy island on the northern bank of the river, nearly a mile above the turn. After passing **Channel Rock** (which lies just to the southward of The Middle Ground) the channel divides and sends a large branch to the northward, directly towards Castle Neck, and then along the southern shore of that peninsula and into the meadow land. The river itself keeps to the westward, past the bare hill above mentioned, and then to the southward, winding in many curves, between marshy banks, to the village of Essex.

The Middle Ground.

Vessels approaching this entrance cannot fail to recognize the Twopenny Loaf, which marks the eastern side of the entrance; and they will also be enabled to discover the mouth of the river by the high grassy hill on **Hog Island**, which will appear over the lower end of Castle Neck when viewed from outside the bar. This hill is one hundred and fifty feet high and is partly cultivated; and several orchards upon its slopes will show over the sand-hills of Castle Neck.

Twopenny Loaf.

DANGERS

IN APPROACHING AND ENTERING ESSEX RIVER.

The bar off this river, like those off the other rivers in Ipswich Bay, is of shifting sand, and therefore no detailed directions can be given for avoiding the dangers. Buoys are placed to mark the entrance and also the channel as far up as Channel Rock; and these buoys are shifted as the bar changes.

The first danger met with on approaching Essex River is called Northern Spit,—a sand-bar making off from the northern shore of Castle Neck (on the western side of the entrance) to a distance of six hundred yards. It is bare at extreme low tides, and is marked by a red spar-buoy (No. 2) placed in nine feet water on the extreme eastern point of the spit, which must be left to the westward.

Northern Spit.

A little over two hundred yards to the southeastward of buoy No. 2 is a black spar-buoy (No. 1), which marks the northwestern end of Southern Spit,—a long, narrow, dry spit lying nearly in the middle of the river. This spit extends **N.** by **E.** and **S.** by **W.** six hundred yards; and the buoy is placed in nine feet water off its northern point,—the channel leading directly between it and the red buoy on Northern Spit.

Southern Spit.

When between these two buoys another buoy (a red spar, No. 4) will be seen ahead and close to the shore of Castle Neck. This is off *Point Neck Shoal*, making off nearly to the buoy, which must be left on the starboard hand. When up with it a red iron spindle with a ball on top will be seen ahead and about two hundred yards distant. This is **Point Neck Rock Beacon**, and is built on Point Neck Rock, dry at half-tide, and lying fifty yards off the northern end of the spit. It is to be left to the westward, and must be passed close-to to be in the deepest water.

Point Neck Rock.

When past the beacon on Point Neck Rock a red spar-buoy will be seen about half a mile ahead bearing about **S.** by **W.** This is on the northeastern end of The Middle Ground, a long sand-spit, dry at low water, which makes off from the eastern end of Castle Neck in a **S.** by **W.** direction for three-quarters of a mile. Off the northeastern point of the shoal is placed a red spar-buoy (No. 6) in nine feet water, which should be passed close-to, leaving it to the westward. Six hundred yards to the southward of this buoy is *a shoal, bare at low water*, which lies over three hundred yards to the southeastward of the southeastern end of The Middle Ground. At extreme low tides this shoal is bare to the buoy, which is a quarter of a mile from the southeastern point of The Middle Ground, and is a red spar, marked No. 8, placed in nine feet on the edge of the shoal.

The Middle Ground.

At buoy No. 8 the channel takes an abrupt turn to the westward, skirting the southern side of The Middle Ground, and there will be seen, between six and seven hundred yards due **W.**, a red spar-buoy (No. 10). This is on the northern side of the channel, and is placed on the southern side of Channel Rock, which lies off the southern point of The Middle Ground, two hundred yards **S.** from the **Black Rocks**. Several sand-shoals, dry at low water, lie between this rock and the Black Rocks; and the buoy must be left to the westward close-to.

Channel Rock.

Beyond Channel Rock the channel is so narrow and crooked as to be entirely unsafe for strangers, and a pilot should always be taken by vessels bound up to the village.

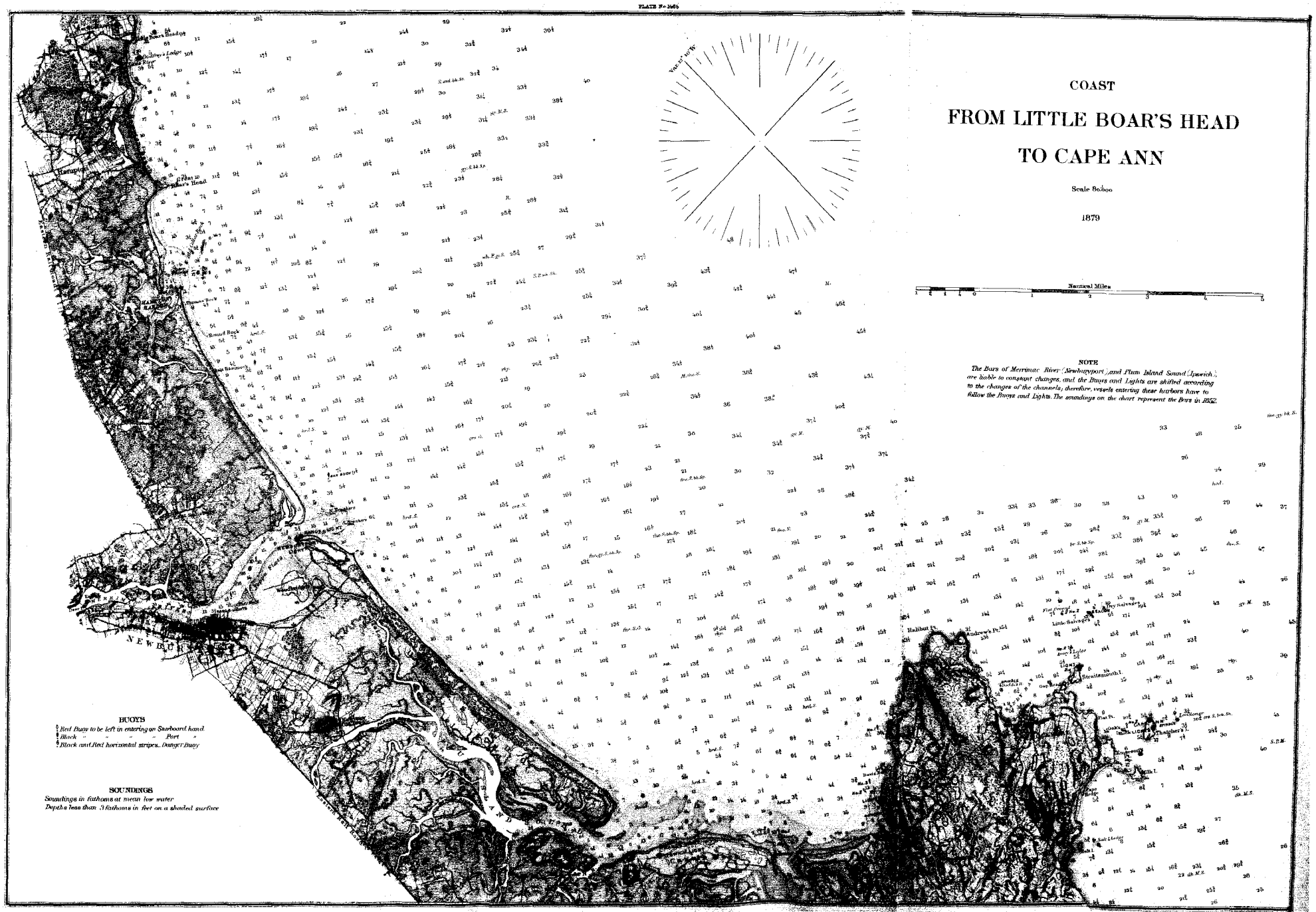
In coming in vessels must endeavor to keep close to the line of the buoys, and at the red buoy off the northeastern end of The Middle Ground should steer so as to have the red buoy off the southeastern end a little open to the westward until nearly up with it, when they should round it close-to to avoid *a long spit making off from the eastern shore* of the river, which has four feet at mean low water and comes within one hundred yards of the buoy.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING ESSEX RIVER.

First. When up with the bar, take a pilot. *Second.* If you desire to make a harbor of refuge, and necessity compels you to attempt this bar in the day-time, take the following courses, which were sailed in 1878: Bring Ipswich Light-house to bear **W NW.** and Annisquam Light-house **SE.**, and steer **SW.** ¾ **S.** for Point Neck Rock Beacon, which course leads between the red buoy on Northern Spit and the black buoy off Southern Spit. Then steer **SW.** until up with Point Neck Shoal buoy, when steer **S.** by **W.** ¾ **W.**, passing to the eastward of Point Neck Rock Beacon. This course continue until the buoy on the northeastern end of The Middle Ground bears **S.**, when steer for it, passing to

PLATE No 1665



COAST

FROM LITTLE BOAR'S HEAD TO CAPE ANN

Scale 80,000

1879

Nautical Miles

NOTE

The Bars of Merrimac River (Newburyport) and Plum Island Sound (Ipswich) are liable to constant changes, and the Buoys and Lights are shifted according to the changes of the channels; therefore, vessels entering these harbors have to follow the Buoys and Lights. The soundings on the chart represent the Bars in 1852.

BUOYS

Red Buoy to be left in entering on Starboard hand.
Black " " " Port "
Black and Red horizontal stripes, Danger Buoy.

SOUNDINGS

Soundings in fathoms at mean low water
Depths less than 3 fathoms in feet on a shaded surface

the eastward close-to, and follow the port shore at the same distance until you are up with the red buoy off the southeastern end of The Middle Ground. Round this buoy close-to, leaving it to the westward, and steer W. by S. until up with Channel Rock buoy, when anchor in five fathoms, sandy bottom. Above this a pilot is necessary. *Sailing Directions---Essex River.*

The buoys are shifted as the channel over the bar shifts, and six feet at low water may be carried over the bar.

ANNISQUAM HARBOR.

This, the most easterly of the harbors of refuge in Ipswich Bay, is situated on the western side of Cape Ann, and is formed by Squam River, which empties into the bay at the point where the cape joins the main shore. The entrance is in

Latitude ..... 42° 39′ 30″ N.
Longitude ..... 70° 40′ 40″ W.

The mouth of Squam River is a mile and a half to the eastward of the entrance to Essex River, and the shore between the two entrances is a sand beach backed by sand hillocks, and these again by hills from sixty to one hundred feet high, some grassy and some wooded. The entrance to Squam River is between Babson's Point on the east and Barn Point on the west, and is eight hundred yards wide. Thence its course is first S SE. for half a mile, thence SW. by S. for one mile, and then nearly S. for a little over half a mile to **The Divide**, where one branch runs to the westward and then to the southward, and is called **Little River**, while the other runs to the eastward half a mile and then to the southeastward half a mile, terminating on the back side of the town of Gloucester. **Squam River.**

Two small streams empty into Squam River during its course,—one, **Mill River**, which empties into the river on its eastern side three-quarters of a mile above the mouth, and the other, **Jones' River**, which flows in through the western banks seven-eighths of a mile above the entrance. They are both shallow and crooked, and of but little importance.

The village of **Annisquam** is situated on the eastern bank of Squam River, just behind Babson's Point, where a long narrow cove shoots up into the land between high hills. This cove is called Lobster Cove, and upon its western bank is the principal wharf-line of the village. The cove is nearly all bare at low water, and is crossed by a draw-bridge four hundred yards above its mouth. **Lobster Cove.**

On the western shore of Cape Ann, eight hundred and fifty yards to the northward of Babson's Point, is a low cleared point, backed by hills about sixty feet high, also bare. This is **Wigwam Point**, and on it is built the light-house which is the guide to Annisquam Harbor. Annisquam Light-house is an octagonal wooden tower thirty-four feet high, with a black lantern, which shows a fixed white light, of the fifth order of Fresnel, from a height of fifty feet above sea-level, visible thirteen miles. Its geographical position is **Annisquam Light-house.**

Latitude ..... 42° 39′ 41″ N.
Longitude ..... 70° 40′ 54″ W.

There is a small cove on the southern side of Wigwam Point, which is bare at low water; and thence to Babson's Point (nearly half a mile to the southward) the shore is composed of grassy hills, varying in height from sixty to one hundred feet. The village is not visible,—being built on the eastern slopes of the hills.

Babson's Point, which is the eastern point of entrance to Squam River, is cleared, grassy and gently sloping, tolerably bold-to, and settled on its southern side. A small cove, bare at low water, makes in along the southern shore to the back of the town. The southern point of entrance to this cove, called **Lane's Point**, is covered with houses, and has a square wooden beacon off its southern end. On the western side of Lane's Point is the entrance to Lobster Cove, before mentioned, which forms the inner harbor. **Babson's Point.**

Barn Point, the western point of entrance to Squam River, is bare and rocky, about twenty feet high, and rises to a height of eighty feet a few hundred yards back of the shore. A quarter of a mile to the southward of Barn Point the shore is low and grassy, faced by a sand-beach, with several outlying rocks extending off in a northeasterly direction to the edge of the channel and called **Barn Rocks.** **Barn Point.**

The western shores of Squam River below this grassy land are mostly salt-meadow and marsh nearly to the mouth of Little River, while on the eastern side the shores are mostly cleared and cultivated lands, presenting an undulating surface, and tolerably well settled.

Seven hundred yards to the southward of Lane's Point is the entrance to Mill River, which empties into Squam River between a small marsh island on the north and a cleared and cultivated point fifty feet high on the south. This point has several houses upon it, and an orchard upon its summit. Mill River is only two hundred yards wide at its mouth, and diminishes to a width of fifty yards an eighth of a mile to the southward; then it widens out into a broad shallow bay, three hundred yards wide, on the eastern bank of which is built the village of **Dogtown.** **Mill River.**

Both shores of this river are composed of hills of various heights, mostly grassy, and in many places under cultivation. At the southern end of the village, three-quarters of a mile above the mouth, the river is crossed by a mill-dam upon which are built several saw-mills.

Six and a half feet at mean low water can be safely taken over the bar at the entrance to Squam River.

DANGERS

IN APPROACHING AND ENTERING ANNISQUAM HARBOR.

I. ***Coming from the Northward and Northwestward.***—In approaching this harbor from the northward or westward it is necessary to bring the light to bear S. and run for it. On this course the first danger met with is Harridan's Rock, on the eastern side of the entrance, with seven feet at mean low water. It is a detached rock, lying four hundred yards from shore and three-eighths of a mile (seven hundred and fifty yards) N. by E. ½ E. from Annisquam Light-house, and at low spring tides it has only five feet upon it. A black spar-buoy (marked No. 3) is placed in fifteen feet water on the western side of the rock; and this buoy may be left quite close-to to the eastward in day-time, but at night the bearing of the light must be kept.

Harridan's Rock.

A little over three hundred yards W. by S. ¾ S. from buoy No. 3 will be seen a red spar-buoy (No. 2), which is called the "Bar Buoy." It is in fifteen feet and marks the western side of the channel, which passes between it and Harridan's Rock buoy.

After passing the Bar Buoy there are no dangers met with until you are past the light-house, when a square granite beacon of open work, with its top painted black, will be seen on the port bow about four hundred yards to the southward of the light, and must be left to the eastward. This is on Lobster Rock,—a dry rock, lying four hundred yards SW. by S. ¼ S. from the light-house and one hundred and fifty yards from shore. Care must be taken to keep pretty close to the beacon to avoid *a long sand-spit, dry at low water*, which extends in a N. by E. direction from the grassy point on the western bank of the river just below Barn Point to a distance of seven hundred yards. This brings its northern point directly opposite to the beacon on Lobster Rock, from which it is distant two hundred and fifty yards in a W. by N. ½ N. direction.

Lobster Rock.

Barn Rocks are a group of detached rocks, bare at half-tide, which extends off in a NE. by N. direction from the eastern end of the sand beach to the southeastward of Barn Point to a distance of an eighth of a mile from the western shore of the river. The northernmost rock is directly opposite to the northern extremity of Babson's Point and close to the edge of the channel; and the rocks are not buoyed, as they always show themselves.

Barn Rocks.

After passing Barn Rocks the channel is clear to the anchorage in the outer harbor, and it is only necessary to keep off the flats on the western bank; but if intending to enter Lobster Cove, or the inner harbor, steer to the eastward nearly for a square, black, wooden beacon, which is built close to high-water mark on the southern extremity of Lane's Point. There is *a flat, dry at low water*, which makes off in a northerly direction from the marsh island to the southward of the mouth of the cove to within fifty yards of the beacon. Vessels must, therefore, hug Lane's Point, passing the beacon close-to, and leaving it to the northward. Two feet at mean low water may be taken into the cove, but no strangers ever enter it for shelter,—the anchorage in the river being sufficiently well protected.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING ANNISQUAM HARBOR.

I. ***Coming from the Northward and Northwestward.***—Bring Annisquam Light-house to bear S. and steer for it. This course will carry you over the bar about midway between Harridan's Rock buoy and the Bar Buoy with not less than six and a half feet water. Continue the course until within three hundred and fifty yards of the light-house, and you have the beacon on Lobster Rock bearing S. by W. ½ W., when steer S. by W. ¾ W., leaving that beacon close-to to the eastward, and continue the course until you are abreast of the northernmost of the Barn Rocks. The beacon on Lane's Point will then be just touching the southern face of Babson's Point on a bearing of SE., and you must steer SE. by S. until Lobster Cove is completely open and the beacon on Lane's Point bears N. ¾ E., when anchor in from three to five fathoms, sandy bottom. Above this it is not safe to go without a pilot. *If bound into the inner harbor*, continue the course SE. by S. until you are almost abreast of the beacon on Lane's Point, having it bear E. by N. ⅛ N., when steer E. by N., leaving the beacon close-to to the northward. After passing the beacon keep about seventy-five yards from the wharf-line of the town, and anchor or run alongside the wharves.

The above directions were good for the year 1878.

DANGERS

IN APPROACHING AND ENTERING ANNISQUAM HARBOR.

II. ***Coming from the Eastward.***—The first obstruction met with in approaching this harbor from the eastward or northeastward is Plum Cove Ledge, which is not in the way except of vessels beating to windward or of those who hug the shore of Cape Ann bound in

Plum Cove Ledge.

to Annisquam. It is a rocky ledge, bare at low water, which lies off **Plum Cove**, (on the western shore of the cape,) an eighth of a mile from shore and nearly a mile and a quarter **NE.** ¼ **E.** from Annisquam Light-house; and from Davis' Neck it is distant a little over half a mile **NE.** A black spar-buoy (No. 1) is placed in three and a half fathoms, rocky bottom, off this ledge, and you must pass to the northward of it,—giving it a berth.

Plum Cove is often called **Lane's Cove**, from the small village of **Lanesville**, which is situated on the western shore of Cape Ann, just back of the cove.

Harridan's Rock is the next obstruction met with after passing Plum Cove Ledge buoy, and has been already described, on page 526, as a sunken rock with seven feet water at mean low tides and five feet at low springs. It lies four hundred yards from shore and three-eighths of a mile (seven hundred and fifty yards) **N.** by **E.** ½ **E.** from Annisquam Light-house, and is marked by a black spar-buoy (No. 3) placed in fifteen feet at mean low water on the western side of the rock. This buoy must be left to the eastward pretty close-to. ***Harridan's Rock.***

After passing Harridan's Rock and the Bar Buoy there are no obstructions until you are past the light-house and up with Lobster Rock, a dry rock lying four hundred yards **SW.** by **S.** ¼ **S.** from the light-house and one hundred and fifty yards from shore. On its top is built a square granite beacon of open work with a black top, which must be left to the eastward going in. (See page 526.) ***Lobster Rock.***

The dangers and obstructions in the river, after passing its mouth, are fully described on page 526.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING ANNISQUAM HARBOR.

II. ***Coming from the Eastward, along the western shore of Cape Ann.***—The course alongshore to the southwestward is **SW.** by **W.** ¼ **W.** until you are up with the black buoy off Plum Cove Ledge. Pass to the northward of this buoy, giving it a berth of an eighth of a mile, (two hundred and fifty yards,) and steer **SW.** ½ **W.** for the black buoy on Harridan's Rock. Leave this buoy to the eastward close-to, round it, and steer **S.** by **W.** ¾ **W.** past the light-house, past the beacon on Lobster Rock, and continue the course until you are abreast of the northernmost of the Barn Rocks and the beacon on Lane's Point just touches the southern extremity of Babson's Point on a bearing of **SE.** Now steer **SE.** by **S.** ½ **S.** until Lobster Cove is completely open and Lane's Point beacon bears **N.** ¾ **E.**, when there will be anchorage in from three to five fathoms, sandy bottom. There will not be less than six and a half feet on the above course in crossing the bar.

III. ***Coming from the Northeastward, from sea.***—Bring Annisquam Light-house to bear **S.** by **W.** and run for it until up with Harridan's Rock buoy. Leave this close-to to the eastward, and steer **S.** by **W.** ¾ **W.**, following the directions given above.

Six and half feet at mean low water may be taken over the bar.

LIGHT-HOUSE.

Name.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Annisquam Light-house	42 39 41	70 40 54	4 42 43.6	Fixed.	50	13

TIDES.

Corrected Establishment	11h 0m
Mean Rise and Fall of tides	9.0 ft.
Mean Rise and Fall of Spring tides	9.8 ft.
Mean Rise and Fall of Neap tides	8.3 ft.
Mean duration of Rise	6h 7m
Mean duration of Fall	6h 18m
Rise of highest tide observed	11.8 ft.

CURRENTS.

Locality.	First Quarter.		Maximum.		Third Quarter.		Flood or Ebb.
	Set.	Drift.	Set.	Drift.	Set.	Drift.	
Near the Bar Buoy	NNE	1.0	N. by E.	2.0	N. by E.	0.2	Ebb.
	NW	0.5	NW	1.1	W. by S. ½ S.	0.5	Flood.

The above bearings are magnetic and are correct to the nearest quarter of a point, and the drift is in nautical miles. After passing the beacon on Lobster Rock the set of the flood is in the direction of the course of the river. The above merely shows the direction and velocity of current on the bar. The observations were made, as far as practicable, when the influence of the wind was small.

There were no current observations made at the entrance to Essex River.

VARIATION OF THE COMPASS.

Near Annisquam the variation of the magnetic needle for 1879 is 12° 30′ W.,—the annual increase being about 3′.

LIFE-SAVING STATION.

There is a life-saving station on Davis' Neck, near Annisquam Light-house, which has been established by the United States Government, and is supplied with all the apparatus necessary for rescuing the shipwrecked and assisting others who may be in distress.

ICE IN IPSWICH AND ANNISQUAM HARBORS.

These harbors, as a rule, are almost always closed by local formations of ice during the winter months; but the winter of 1874–75, although exceptionally severe, was not remarkable for either the absence or the unusual prevalence of ice-obstructions. Vessels rarely make either of the above-mentioned harbors for an anchorage during the winter season, but prefer running the chances of finding shelter in either Salem, Marblehead or Gloucester Harbor.

CAPE ANN.

The eastern boundary of Ipswich Bay is formed by the western shores of Cape Ann, the northernmost of the two great capes of Massachusetts. It also separates Ipswich Bay from Massachusetts Bay, which is embraced between Cape Ann and Cape Cod. Cape Ann is a large peninsula of irregular shape, lying in a **N NE.** and **S SW.** direction, between five and six miles long, with an average breadth of three and a half miles. Its northernmost point, called Halibut Point, is in

Latitude ..... 42° 41′ 30″ N.
Longitude ..... 70° 37′ 40″ W.

Its easternmost point, called Emerson's Point, is in

Latitude ..... 42° 38′ 12″ N.
Longitude ..... 70° 35′ 25″ W.

Its southernmost point, called Eastern Point, is in

Latitude ..... 42° 34′ 47″ N.
Longitude ..... 70° 39′ 33″ W.

The cape presents a hilly surface, undulating, and diversified with woods and grassy summits, cleared lands and settlements. On its western side are situated **Annisquam** (already described) and the small village of **Lanesville**. On its northern shore is built the town of **Rockport**, situated at the bottom of a deep bight, called Sandy Bay. On its southern shore is the town of **Gloucester**, one of the most important fishing-ports on the coast.

Halibut Point.

Halibut Point, which is the most northerly point of Cape Ann, is composed of cleared lands, sloping gradually to the sea, its summit eighty-five feet above tide-water, and bare of trees. Half a mile to the eastward of it is **Andrew's Point**, which is only forty feet high and bare of trees, but somewhat steeper than Halibut Point. Behind Andrew's Point the hills rise to a height of one hundred and fifty feet and are dotted with trees and houses.

Pigeon Cove.

The shores of the cape are much indented by coves and bays. On the northern shore, to the westward of Halibut Point, is a small but deep cove, called **Folly Cove**, whose shores are cleared and thickly settled. The second indentation on the northern shore is called Pigeon Cove, and is situated on the western shore of Sandy Bay, three-quarters of a mile below Andrew's Point, which is the first point to the eastward of Halibut Point. It is a small oval cove, and forms a good harbor for vessels of light draught; and its shores are occupied by a small village, called **Pigeon Cove Village**, which is the northwestern suburb of Rockport.

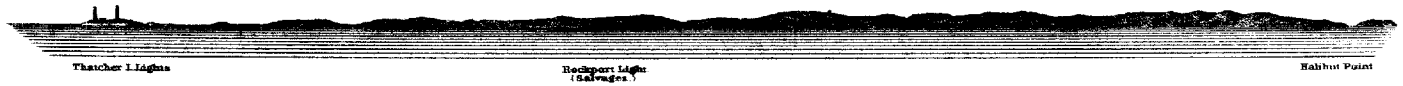
Sandy Bay.

Sandy Bay is a large indentation on the northern face of the cape, embraced between Straitsmouth Island on the east and Andrew's Point on the west. It is two miles wide between these two points, and a mile and a half long to **Rockport Harbor**, a small shallow cove on the southern shore of this bay. Sandy Bay has excellent water and is but little obstructed; and at its eastern point of entrance is a small island, called Straitsmouth Island, which lies off **Gap Head**, the easternmost point of the bay. A shallow strait a hundred and fifty yards wide separates the head from the island.

Straitsmouth Island and Light-house.

Straitsmouth Island is six hundred yards long and four hundred wide, lies **NE.** and **SW.**, is irregular in shape, high and steep at its western end, and gradually diminishes to its northeastern point, where it is but little elevated above high-water mark. It is bare of trees, and occupied only by the light-tower and keeper's dwelling. On its northeastern end is built Straitsmouth Island Light-house,—an octagonal wooden tower, twenty-four feet high, and painted white. It shows a fixed white light, of the sixth order of Fresnel, from a height of thirty-three feet above high-water mark, visible eleven miles. Its geographical position is

Latitude ..... 42° 39′ 43″ N.
Longitude ..... 70° 35′ 19″ W.



Cape Ann from the Eastward, Rockport Light bearing S.W.byW ½W. distant 6 Miles.



Cape Ann from the Northward, Thatcher I. Lights bearing S. ¼ W. distant 6½ Miles.

The Heights Co. N.Y.

Between Gap Head and Emerson's Point there are two coves, the northernmost called **Whale Cove**, and the other **Loblolly Cove**. Whale Cove lies half a mile to the southward of Gap Head, is three-eighths of a mile (seven hundred and fifty yards) wide and a little over three hundred yards long, and is of no importance. A low bare point, called **Flat Point**, separates it from Loblolly Cove to the southward, which is contained between Flat Point and Emerson's Point, and is irregular in shape and quite shallow. Its shores are quite steep and mostly composed of cleared lands.

Emerson's Point.

Emerson's Point, the eastern extremity of Cape Ann, is low and thinly wooded, about twenty or twenty-five feet high, and fringed with bare rocks on its seaward face. On its southern side, where the shore-line turns to the westward towards Cape Hedge, there is a hill between forty and fifty feet high, bare of trees.

Cape Hedge.

From Emerson's Point the shore-line of the cape turns abruptly to the westward, and three-quarters of a mile below is a rocky headland, low and bare, called Cape Hedge. Between this headland and the point the shores are low and occasionally marshy, with high wooded lands rising behind them. There are, however, no rocks between the two points,—Cape Hedge itself being the only rocky outcrop from Emerson's Point to Brier Neck, a mile to the southward.

Brier Neck.

From Cape Hedge the shores run in a **SW.** direction (continuing low and sandy, with wooded hills behind) for half a mile to a bare hill with rocky face, called Brier Neck, which is sixty feet high, and forms a sort of promontory or headland, separating the sandy shores to the northward and southward of it. A small islet, called **Salt Island**, lies an eighth of a mile **S SW.** from this point and the same distance off the shore; and, being within the curve of three fathoms, is of no importance.

Brace's Cove.

The next indentation on the eastern face of Cape Ann is called Brace's Cove, which is three miles and a quarter to the southward of Emerson's Point, and is nearly circular in form but quite shallow. The shores of the cape from Salt Island to this cove are from twenty to forty feet high and mostly fringed with bare rocks. The cove has a diameter of a third of a mile, (six hundred and fifty yards,) and both sides of the entrance are guarded by bare rocks.

Eastern Point.

Brace's Cove is separated from Gloucester Harbor by Eastern Point, the southernmost point of the cape, which is an oval peninsula about three-quarters of a mile long **E NE.** and **W SW.**, and a little over half a mile wide at its widest part. At its northeastern end it is joined to the cape by a narrow neck twenty feet high and between three and four hundred yards wide, which separates Brace's Cove and the outer harbor of Gloucester. The surface of the point is hilly and undulating; and its southern end, where the light-house and keeper's dwelling are situated, is between twenty and thirty feet high,—its summit being sixty feet high and bare. Near the northeastern end, where the low land begins, is a thin growth of trees. Bare ledges crop out here and there on the southeastern slopes, and an earthwork will appear over the northern hill, near Brace's Cove.

Eastern Point Light-house.

On the extreme southern end of Eastern Point is built Eastern Point Light-house, the guide to Gloucester Harbor,—a white tower thirty-three feet high, which shows a fixed red light, of the fourth order of Fresnel, from a height of sixty feet above sea-level, visible thirteen miles. Its geographical position is

Latitude ..... **42° 34′ 47″ N.**
Longitude ..... **70° 39′ 53″ W.**

The light-house is connected by a covered way with the keeper's dwelling, and there is **a fog-bell** in a high wooden tower between the two.

Gloucester Harbor.

Gloucester Harbor is the largest and most important of the many coves and bays which indent the shores of Cape Ann. It is a long and deep cove, very little obstructed, which makes in a **N NE.** direction on the western side of Eastern Point, and is two and a half miles long and from half a mile to a mile and a half wide. The town of **Gloucester** occupies the head of this cove on both shores.

Several islands lie off Cape Ann which may be said to form part of its shores. Of these, **Straitsmouth Island**, which lies close to Gap Head and carries the light-house which is a guide to Rockport Harbor, has been already described on page 528. Half a mile **E.** from Emerson's Point lies another bare islet called **Thatcher's Island**, and only important as being the site of Thatcher's Island Light-houses. It is of an irregular shape, lies **NE.** and **SW.**, and is nearly half a mile long and three hundred and fifty yards wide. The land is fifty feet above high-water mark at its highest part and is destitute of trees. Upon its summit stand two granite towers, eight hundred and ninety-five feet apart and one hundred and twelve feet high, which show fixed white lights, of the first order of Fresnel, from a height of one hundred and sixty-five feet above sea-level. These lights, which are sometimes called **Cape Ann Light-houses**, are visible twenty miles at sea, and the towers present so peculiar an appearance that they can never be mistaken for any other light-houses. A covered way, painted stone color, connects the light-houses and the keepers' dwellings. The house belonging to the northernmost light is a frame building, painted white; the other is a brick house. The geographical position of the northern light is

Thatcher's Island Light-houses.

Latitude ..... **42° 38′ 19″ N.**
Longitude ..... **70° 34′ 30″ W.**

The southern light is **S.** by **W.** ½ **W.** from the northern light, and its geographical position is

Latitude ..... **42° 38′ 11″ N.**
Longitude ..... **70° 34′ 30″ W.**

Thatcher's Island bears from—

	Miles.
Seguin Island, SW. ¼ S.	73
Cape Small Point, SW. ¼ S.	71
Cape Elizabeth, SW. by S. ¼ S.	58
Wood Island, SW. by S. ⅛ S.	49
Cape Porpoise, S. by W. ⅛ W.	43
Portsmouth Entrance, S.	25
Boon Island, S. by W. ⅛ W.	28¼
White Island Light-house, (Isles of Shoals,) S. ¼ W.	19½
Newburyport Entrance	14
Eastern Point, (Gloucester,) NE. by E. ¼ E.	5
Baker's Island, (Salem,)	11
Nahant Head, NE. by E. ¼ E.	19
Long Island Light-house, (Boston,) NE. ⅛ E.	25
Boston Light-house, NE. ¼ E.	23
Race Point Light-house, (Cape Cod,) N. by W.	37
Highland Light-house, (Cape Cod,) N NW.	43½

Fog-signal. The fog-signal at Cape Ann, situated on Thatcher's Island, is a ten-inch steam whistle, giving each minute a blast of eight and one of four seconds, with alternate intervals of four and forty-four seconds.

Milk Island. Half a mile W SW. from Thatcher's Island is a small low island, called Milk Island, eight hundred yards S SE. from Emerson's Point, irregular in shape, and about three hundred and fifty yards in diameter. Its shores are about ten feet above sea-level and perfectly bare of trees, and ledges and shoals surround it. Milk Island has one solitary house upon it, near its western end.

There is an excellent and much-used passage between Thatcher's Island and the main shore of the cape, which is about half a mile wide, and is obstructed by a sunken rock, near the middle of the passage, called Oak Rock. There is from four to seven fathoms water on both sides of this rock, but the best channel is between it and Thatcher's Island.

Oak Rock. Oak Rock has four feet at lowest tides, and is marked by a red spar-buoy (No. 2) placed in twenty feet water on the eastern side of the ledge. There are also two shoal spots with from fifteen to eighteen feet between Milk Island and the southwestern point of Thatcher's Island; and strangers must not use this passage. There is also a narrow and shoal passage between Milk Island and the main, but it is not fit for strangers.

Salt Island, near Brier Neck, has already been described.

Dry and Little Salvages. A little to the eastward of Thatcher's Island will be seen two low, bare, rocky islets, upon one of which is a tall tripod, covered about a third of the way from the top, and painted red. These are the Dry and Little Salvages, dangerous obstructions in the approaches to the harbors on the cape, and especially to Rockport Harbor. The tripod is on the Dry Salvages, and its top is sixty-five feet above high-water mark.

GENERAL COURSES

FOR VESSELS BOUND TO CAPE ANN FROM THE NORTHWARD OR SOUTHWARD.

Vessels bound from Penobscot Bay to Cape Ann take their departure from Monhegan Light-house and steer **SW. ½ W.** The distance is eighty-four miles, and in ordinary weather the lights on Seguin, Boon Island and the Isles of Shoals will be seen. This course leads clear of all dangers, and should make Thatcher's Island Light-houses nearly ahead. In passing them they must receive a berth of a mile to avoid *The Londoner*, a bad rock, dry at low water, which lies half a mile from the island, and is marked by an iron spindle and cage. There is plenty of water between it and the island, but strangers had better pass outside of it.

Vessels bound from the Kennebec and vicinity bring Seguin Light-house to bear **NE. ¼ N.** and steer **SW. ⅜ S.**, which course leads clear of all dangers. The distance is seventy-three miles, and Thatcher's Island Light-houses should be made a little on the starboard bow. The lights on Half-Way Rock, (Casco Bay,) Cape Elizabeth, Boon Island and the Isles of Shoals will be made and passed in their regular order.

Vessels bound from Portland to Cape Ann bring Cape Elizabeth Light-houses to bear **NE. by N. ½ N.** and steer **SW. by S. ½ S.**,—the distance being fifty-eight miles. This course leads two miles outside of *Boon Island Ledge*,—the only danger. The lights on Wood Island, (Saco Bay,) Goat Island, (Cape Porpoise,) Boon Island and Isles of Shoals will be seen and passed in their regular order. In very clear weather the light on The Whale's Back, at the entrance to Portsmouth, may be seen; but this rarely happens, however. Boon Island Light-house will be passed about five miles off; but you must be careful not to pass too close to this light for fear of the ledge.

Vessels bound from Saco to Cape Ann take their departure with Wood Island Light-house bearing **NW.** by **N.**, four miles distant, and Cape Elizabeth Light-houses **NE.** by **N.** ½ **N.**, ten miles distant, with forty-six fathoms water, rocky bottom, and steer **SW.** by **S.** ½ **S.** The distance is forty-seven miles from the point of departure, and the course leads two miles outside of Boon Island Ledge. *Or, wishing to hug the shores more closely,* bring Wood Island Light-house to bear **NW.** by **N.**, a mile and a half distant, and Cape Elizabeth Light-houses **NE.** ¼ **N.**, and steer **SW.** ½ **S.** On this course Cape Porpoise Light-house will be passed two miles and three-quarters off in about thirty fathoms water, and Boon Island Light-house will be made on the eastern side of the passage, and Isles of Shoals Light-house directly ahead. When Boon Island Light-house bears **SE.** ¾ **E.**, (that is, exactly abreast of it,) with twenty-five fathoms, steer **S.** by **W.** ¼ **W.**, which will lead safely to the cape. This course will pass a mile and a half to the westward of Boon Island Light-house and four miles and a half to the eastward of White Island Light-house. ***General Courses--Bound to Cape Ann.***

Vessels bound from Portsmouth to Cape Ann bring Portsmouth Light-house to bear **N.** ¾ **W.** and steer **S.** ¾ **E.** until they are abreast of White Island Light-house, (Isles of Shoals Light-house,) having it bearing **E.**, distant nearly one mile and a half, and are in twenty fathoms water. The course thence is **S.** ¼ **E.** and the distance twenty-five miles.

Vessels bound from Salem to Cape Ann steer **E.** by **S.** from Baker's Island Light-houses until Thatcher's Island Light-houses bear **NE.** ¼ **N.**, when they steer **NE.** by **E.** until abreast of the cape lights. The distance by these courses is fourteen miles.

Vessels bound from Boston to Cape Ann, if coming out by the Broad Sound Channel, steer **NE.** by **E.** for Thatcher's Island. The distance is twenty-three miles, and the course leads clear of all dangers and a mile and a half outside of Thatcher's Island. The lights on Egg Rock, (Nahant Bay,) Marblehead Neck, (Marblehead Harbor,) Baker's Island and Eastern Point are made and passed in the above regular order on this course.

A vessel leaving Boston by the Main Ship Channel and bound to Cape Ann must bring Boston Light-house to bear **W.**, one mile and a half distant, and Point Allerton **SW.** ¼ **W.**, one mile and three-quarters distant, with eight fathoms water, and steer **NE.** ¼ **E.**, (keeping Point Allerton over the stern,) which course will lead clear of everything a mile and a half outside of Thatcher's Island. The distance is twenty-three miles from the point of departure and twenty-four and a half from Boston Light-house.

LIGHT-HOUSES.

Names.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Straitsmouth Island Light-house	42 39 43	70 35 18	4 42 21.2	Fixed.	83	11
Thatcher's Island Light-houses, N.	42 38 19	70 34 30	4 42 18.0	Fixed.	165	20
Thatcher's Island Light-houses, S.	42 38 11	70 34 30	4 42 18.0	Fixed.	165	20

PIGEON COVE.

Of the harbors and coves on the northern face of Cape Ann there are three which deserve mention,—all affording good shelter for vessels of light draught. The first of these met with, in coming along the shore of the cape from the northward, is Pigeon Cove, a small oval cove, lying three-quarters of a mile to the southward of Andrew's Point, and an excellent harbor for light-draught vessels. By private enterprise this cove has been formed into a secure harbor, and a small charge is made to vessels using the shelter thus afforded. It is three-quarters of a mile long and nearly two hundred yards wide, and runs **N NW.** and **S SE.** On the northeast it is protected by a breakwater, and from the eastern side of the entrance a pier is built out, which makes the harbor nearly land-locked. It is shoal, but affords a secure anchorage for small vessels; and there is quite a settlement on its shores.

SAILING DIRECTIONS.

I. ***Coming from the Northward.***—Pass Andrew's Point on a **SW.** by **S.** ½ **S.** course, about six hundred yards from shore, and in about twelve fathoms water, and continue this course until the cove is opened and the large pier and warehouse in the centre of the bight slightly open to the westward

of the pier at the entrance on a bearing of **NW.** by **N.** $\frac{3}{4}$ **N.** There will be at this point nine fathoms water, and you may steer for the pier and anchor at pleasure, in from six to twelve feet water.

II. ***Coming from the Eastward.***—When off the entrance to Rockport, with Straitsmouth Island Light-house bearing **SE.** by **E.** $\frac{1}{2}$ **E.** and the stone factory in Rockport **W SW.**, with eleven fathoms water, steer **NW.** $\frac{1}{4}$ **W.**, carrying not less than ten fathoms, until the two piers are nearly in range, as before, on a bearing of **NW.** by **N.** $\frac{3}{4}$ **N.**; when steer that course, as before directed.

ROCKPORT HARBOR.

This harbor forms the best refuge on the northern shore of Cape Ann, and is situated at the bottom of Sandy Bay, which is the largest indentation on the shores of Cape Ann, (except Gloucester Harbor on the southern side of the cape,) extending from Gap Head on the east to the entrance to Pigeon Cove on the west. This bay is nearly two miles wide at its entrance, and a mile long to the entrance to Rockport Harbor. From Andrew's Point to the suburbs of Rockport its shores are thickly settled; and between Pigeon Cove and the town the shore-line shows low and rather bold shores, faced with rocks and backed by high, steep, wooded hills, separated by lower lands, which are cleared, cultivated and thickly settled. The highest land is about one hundred and twenty feet.

Sandy Bay.

Rockport Harbor is situated, as before mentioned, at the bottom of that curve in the shore-line which forms Sandy Bay, and has, properly speaking, two harbors. The waters of the western harbor wash the northern face of the town, and those of the harbor proper lie along its eastern face. The two coves are separated by a narrow neck of land covered with buildings, and having a wharf-line in each harbor. This neck of land runs **NE.** by **E.** for nearly four hundred yards; and from its extremity a stone breakwater extends **E.** by **S.** for nearly two hundred yards and forms the protection to the Inner Harbor.

Outer Harbor of Rockport.

The western harbor, which forms the Outer Harbor, is a cove three-eighths of a mile wide at its entrance and a quarter of a mile long. There are few obstructions in the approaches to it, and the water shoals very gradually as the shore is approached. It is, however, no harbor at all in northerly and easterly winds, as there is no shelter whatever; but with a southerly or westerly gale it affords a good harbor of refuge.

Inner Harbor of Rockport.

The harbor proper, or Inner Harbor, is a narrow cove extending into the land in a **SW.** direction, a quarter of mile long and an eighth of a mile wide; but the breakwater at the entrance narrows the available passage to a width of about one hundred yards. Neither of these harbors is much used, even as a harbor of refuge, (vessels preferring to make a better harbor or an offing,) unless when Gloucester Harbor is not accessible. Vessels of light draught will find the harbor proper, however, a good shelter in all winds, and easy of access, as eleven feet at mean low water may be carried into the anchorage. The large granite factory in Rockport is a conspicuous object, and is used as a guide to enter the harbor. It is built on the low land at the bottom of the cove which forms the harbor proper, and viewed from the entrance appears in range with a large pier.

The town of **Rockport** occupies nearly all of the southern shore of Sandy Bay.

DANGERS

IN APPROACHING AND ENTERING ROCKPORT HARBOR.

I. ***Coming from the Northward and Northeastward.***—Vessels coming from the northward alongshore and bound into Sandy Bay or Rockport will find the approaches unobstructed; but those coming from the sea will encounter several dangers and obstructions, which must be safely passed before the entrance is clear. Of these the first met with is called The Flat Ground, which is an extensive ledge, lying nearly **N.** and **S.**, and half a mile long—in reality a group of three ledges, separated by two narrow passages with over three fathoms at mean low water. The northernmost ledge has ten feet, the middle one thirteen, and the southernmost rock has only two feet and is bare at low spring tides. The general bearing of the ledge is **SE.** by **E.** $\frac{1}{4}$ **E.**, two and a quarter miles from Halibut Point. A large red spar-buoy (No. 2) is placed in four fathoms off the southern rock, and should be left to the northward by vessels bound into Rockport from seaward or beating up towards Halibut Point. Vessels coming from the northward, however, leave it to the eastward and give it a berth, thus passing between the mainshore and The Flat Ground. This buoy bears **NE.** by **E.** $\frac{1}{4}$ **E.** from **Rockport Breakwater,** a mile and a half distant, and **NE.** by **N.** $\frac{3}{4}$ **N.** from Straitsmouth Island Light-house, seven-eighths of a mile distant. From Thatcher's Island North Light-house it bears **N.** $\frac{1}{4}$ **E.**, two miles and a quarter distant.

The Flat Ground.

There is a good channel with nine fathoms water, and a third of a mile wide, between The Flat Ground and *The Salvages*, which are a most dangerous group of bare and sunken ledges, lying between the bearings of **E NE.** and **NE.** by **E.** from Straitsmouth Island Light-house, and **E.** by **N.** from Rockport Breakwater. They are in reality two groups, lying **E.** and **W.** from each other, about three hundred and fifty yards apart. The eastern group is called the Dry Salvages and the other the Little Salvages.

The Dry Salvages are so called because the summit of the northernmost rock in the group is always dry, forming a bare islet about ten feet high, surrounded by ledges dry at low water. To the northward of it extends a long reef, dry at low water; and to the southward a group of ledges, also bare at low water, stretches to a distance of two hundred and fifty yards, or an eighth of a mile. The whole ledge, including the islet and the reefs to the northward and southward of it, is about a quarter of a mile long, in a N. and S. direction, between the lines of three fathoms. The islet bears from ***Dry Salvages.***

	Miles.
Straitsmouth Island Light-house, E NE	1⅛
Thatcher's Island North Light-house, N. by E. ¾ E	2
Rockport Breakwater, E. ¾ N—a little over	2

On the highest part of the Dry Salvages, about ten feet above high-water mark, is a wooden tripod fifty-five feet high. The upper third of the tripod is covered in so as to present the appearance of a pyramid and is painted red.

The Little Salvages lie three hundred and fifty yards W. from the Dry Salvages, are bare at low water, and extend in a N. and S. direction four hundred and fifty yards. The centre of the reef bears from ***Little Salvages.***

	Miles.
Straitsmouth Island Light-house, NE. by E—nearly	1
Thatcher's Island North Light-house, NE. by E. ¼ E	2
Rockport Breakwater, E. by N	1¾

Between these ledges and the Dry Salvages there is a passage three hundred yards wide; but it is unsafe,—being obstructed by *a rock with one foot at mean low water and bare at spring tides.* This rock lies one hundred and fifty yards E. from the Little Salvages and nearly four hundred yards NW. from the bare rock on the Dry Salvages. Fishermen acquainted with the locality sometimes pass through the channel and avoid this rock by hugging either the western side of the Dry Salvages or the eastern side of the Little Salvages.

After passing the red buoy on The Flat Ground the next danger met with is called Avery's Ledge; and coming from the northward and northeastward you must leave it to the eastward whether passing alongshore inside The Flat Ground or between that ledge and The Salvages.

Avery's Ledge is a mass of sunken rock two hundred yards square, lying one-third of a mile (six hundred and fifty yards) N. by E. ½ E. from Straitsmouth Island Light-house. ***Avery's Ledge.***

It has four feet at mean low water, and is marked by a red spar-buoy (No. 2) placed in three and a half fathoms off the southwestern side of the ledge. This buoy is intended as a guide alike to vessels approaching Rockport from the northward and from the southward, although those approaching from the northward give it a wide berth if following the courses, and leave it to the southward as if it were painted black. It bears from The Flat Ground buoy SW. by S. ¼ S., eleven hundred yards; from the Dry Salvages W. ½ S., nearly one mile; and from Rockport Breakwater E. ¾ N., one mile and an eighth distant. Between Avery's Ledge and Straitsmouth Island is the entrance to Sandy Bay or Rockport Harbor from the southward.

Vessels beating into Rockport Harbor must not stand too close to the western shore of Sandy Bay when just to the southward of Pigeon Cove, in order to avoid a group of sunken rocks, some of which are nearly bare at low water, lying about three hundred and fifty yards from shore. The most northerly of these, which is called Mitchell's Rock, lies seven hundred yards to the southward of the entrance to Pigeon Cove and three hundred and fifty yards from shore, has four feet at mean low water and is not buoyed. The shore is bold-to, and there is four fathoms water between it and the rock. *Bartlett's Rock* lies nearly two hundred yards S. by W. ½ W. from Mitchell's Rock, and has two and a half feet at low water. It is three hundred and fifty yards from shore and is surrounded by shoal water; but there is a depth of from three to four fathoms water between it and the western shore of the bay. ***Mitchell's Rock.***

One hundred yards S. ½ W. from Bartlett's Rock (with which a sunken ledge connects it) is a small bare rock known as Dodge's Rock. It is three hundred and seventy-five yards (one-fifth of a mile) from shore and nearly three hundred yards S. by W. from Mitchell's Rock; and shoal ground extends in every direction from it. An iron spindle, thirty-five feet long, surmounted by a cage and painted red, is placed upon the dry part of this rock; and just to the northeastward of the spindle will be seen a red spar-buoy, marked No. 4. These marks serve to enable vessels to avoid Mitchell's and Bartlett's rocks as well as Dodge's Rock; but the best rule to avoid them all is not to go inside of Andrews' Point bearing N. ⅛ W. and Rockport Breakwater S. ⅛ E. ***Dodge's Rock.***

On the eastern side of the approach, when to the westward of Straitsmouth Island Light-house, look out for Twelve Feet Rock, lying NW. from Gap Head and three hundred and fifty yards from shore. It has twelve feet at mean low water and ten at low spring tides, and is not buoyed; but it is not dangerous except in heavy weather. ***Twelve Feet Rock.***

The next danger met with by vessels bound into the Inner Harbor of Rockport is Breakwater Ledge, lying on the northern side of the entrance to Rockport Harbor proper, and extending off from the end of the breakwater in an **E NE.** direction. Nearly a hundred yards from the eastern end of this breakwater is *a single rock, awash at lowest tides*, and with two feet at mean low water. It is not buoyed, but always shows itself by breakers.

Breakwater Ledge.

When past Breakwater Ledge, and you are in the entrance to the harbor, there will be seen ahead, close in with the large pier at the head of the harbor, a red spar-buoy (No. 6). This marks the location of a large block of granite sunk near the pier, forming an obstruction to which has been given the name *Harbor Rock*. It may be easily avoided by watching the bearings of the buoy.

Vessels intending to anchor in the Outer Harbor must, when to the southward of Dodge's Rock, look out for Sandy Bay Ledge, a rocky islet, bare of all vegetation and about a hundred yards square, which lies two hundred yards from the western shore of Sandy Bay and half a mile **S. ¾ W.** from the southern point of Pigeon Cove. It is surrounded by shoal water, and there is no passage between it and the shore; and from it the eastern end of Rockport Breakwater bears **SE.** nearly half a mile distant.

Sandy Bay Ledge.

SAILING DIRECTIQNS

FOR APPROACHING AND ENTERING ROCKPORT HARBOR.

I. ***Coming from the Northward and Northeastward, alongshore.***—Pass Andrews' Point half a mile (eight hundred yards) off, in twelve fathoms, and steer **S.**, carrying not less than ten fathoms, until you are off the mouth of the Inner Harbor, with eleven fathoms, hard bottom, and the stone factory in Rockport bears **W SW.** in range with the large pier. Now steer that course, passing midway between the points of entrance, and anchor in eleven feet; or pass between the buoys to the pier-heads. *Or*, steer **S.** by **E.** for Straitsmouth Island Light-house, (in range with Thatcher's Island North Light-house,) carrying not less than nine fathoms, until the large stone factory in Rockport bears **W SW.** and you are in nine fathoms, hard bottom; when steer for the factory and follow the directions given above. This course passes nearly three hundred yards to the northward of Twelve Feet Rock.

II. ***From the Northeastward, inside The Flat Ground.***—Bring Straitsmouth Island Light-house to bear **SW.** by **S. ¾ S.**, two miles and three-quarters distant, and the extreme end of Halibut Point **W. ½ S.**, two miles and a half distant, and steer **SW. ½ S.**, carrying not less than ten fathoms water, until off the mouth of the Inner Harbor, in eleven fathoms, and the stone factory and pier-head bear **W SW.** Then steer for the factory and proceed as before directed. This course leads a quarter of a mile to the westward of The Flat Ground; three hundred yards to the westward of Twelve Feet Rock; and half a mile to the westward of Avery's Ledge.

III. ***From the Northeastward and Eastward, between The Flat Ground and The Salvages.***—When about a mile and a third **NE. ¼ E.** from the Dry Salvages, bring Thatcher's Island North Light-house to bear **SW.** by **S.** and Straitsmouth Island Light-house **SW.** by **W. ¼ W.**, with forty fathoms, grey mud, and steer **W.** by **S. ¾ S.** for the entrance, passing about midway between the Little Salvages and The Flat Ground and carrying not less than nine fathoms. On this course, when just past Gap Head and you are in eleven fathoms water, there will be seen the large stone factory in Rockport bearing **W SW.** Steer that course and enter the Inner Harbor, following the directions previously given. These courses pass three hundred and fifty yards to the northward of the Little Salvages; three hundred yards to the southward of The Flat Ground buoy; four hundred yards to the northward of Avery's Ledge; and an eighth of a mile to the northeastward of Twelve Feet Rock.

IV. ***From the Eastward to the Southward of The Salvages.***—Bring Straitsmouth Island Light-house to bear **W. ¼ S.**, two miles distant, and Thatcher's Island North Light-house **SW.**, and steer **W. ½ N.**, carrying not less than six fathoms, until the stone factory before mentioned bears **W SW.** and there is eleven fathoms water; when steer for the factory and follow the directions previously given. These courses pass an eighth of a mile to the southward of the shoal of the Dry Salvages; one hundred yards to the southward of the buoy on Avery's Ledge; and an eighth of a mile to the northward of Twelve Feet Rock.

Or, if you fear to go so close to The Salvages at night, bring Straitsmouth Island Light-house to bear **W. ½ N.** and Thatcher's Island North Light-house **SW.** by **W. ¼ W.**, and steer **W.** by **N.**, carrying not less than six fathoms, until Straitsmouth Island Light-house bears **SE.** by **E. ¼ E.** and the

easternmost summit on Gap Head SE. ½ S. Now, with eleven fathoms water, steer W SW. until the opening between the breakwater and the southern point of the entrance can be seen, when steer exactly between them to the anchorage. These courses pass six hundred yards to the southward of the Dry Salvages; nearly eight hundred yards to the southward of the Little Salvages; an eighth of a mile to the southward of Avery's Ledge; and within three hundred yards of Twelve Feet Rock. Strangers must never attempt this harbor by night through this passage, but must make Gloucester or Salem to the southward. *Sailing Directions--Rockport Harbor.*

V. ***Coming from the Northward, to enter the Outer Harbor of Rockport.***—Leave Andrews' Point eight hundred yards to the westward, with twelve fathoms water, and steer S. ¾ W. until you are fairly off the mouth of the Outer Harbor, and have Straitsmouth Island Light-house bearing SE. by E. ¼ E., with ten fathoms water. The centre of the cove will then bear W SW., which course you must steer, carrying not less than five fathoms into the harbor, and anchor according to draught, or run alongside the wharves. This is a good temporary anchorage in southerly winds, but untenable with any wind from N NW. around to E SE. A sort of basin is formed on the western side of the neck by two large piers,—one running N. and S. and the other E. and W., leaving a narrow opening between them. This basin is dry at low water, and vessels lying at any of the piers in it are safe enough in all weathers.

The above courses for the Outer Harbor pass a quarter of a mile to the eastward of Mitchell's, Bartlett's and Dodge's rocks, and three hundred and fifty yards to the southeastward of Sandy Bay Ledge.

DANGERS

IN APPROACHING AND ENTERING ROCKPORT HARBOR.

II. ***Coming from the Southward.***—Vessels approaching from the southward, and bound into Rockport Harbor, will, on nearing Thatcher's Island, see ahead a black beacon or iron spindle about half a mile to the eastward of the island. This is on The Londoner, a dangerous ledge, dry at low water, which lies eight hundred yards SE. by E. ½ E. (bearing of spindle) from Thatcher's Island South Light-house. It extends in a N NE. and S SW. direction, and is six hundred yards long between the lines of three fathoms. On its southern end, which is the dry part, is placed an iron spindle, forty-five feet high, with an octagonal cage on top. This spindle bears from Straitsmouth Island Light-house S. by E. ¾ E., two miles, and from Thatcher's Island North Light-house SE., nine hundred yards distant. To clear The Londoner you must pass to the northward of it and give the spindle a berth of half a mile. *The Londoner.*

There is an excellent channel, with nothing less than six fathoms, between The Londoner and Thatcher's Island, which is the commonly-used passage for coasters and fishermen passing the cape.

After passing The Londoner there are no dangers in the way of vessels bound to Rockport with a fair wind until they are up with Avery's Ledge; but those using the passage between Thatcher's Island and Milk Island will find in the middle of the channel a dangerous ledge called Oak Rock. It has six feet at mean low water, lies half a mile W NW. from Thatcher's Island North Light-house, and is marked by a red spar-buoy (No. 2) placed on the eastern side of the rock in twenty feet water. It may be left on either hand, but the usual course for vessels leads on its eastern side. *Oak Rock.*

Avery's Ledge (already described, page 533) is a mass of sunken rock two hundred yards square, lying a third of a mile N. by E. ½ E. from Straitsmouth Island Light-house. It has four feet at mean low water, and is marked by a red spar-buoy (No. 2) placed in three and a half fathoms off the southwestern end of the ledge. This buoy bears from Rockport Breakwater E. ¾ N. a mile and an eighth, and must be left to the eastward by vessels bound to the northward. *Avery's Ledge.*

Twelve Feet Rock lies NW. from Gap Head, three hundred and fifty yards from shore, and has twelve feet at mean low water. It is not buoyed, and is not dangerous except in heavy weather.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING ROCKPORT HARBOR.

VI. ***Coming from the Southward, by the outside channel.***—Bring Thatcher's Island North Light-house to bear W. by N. and Straitsmouth Island Light-house NW. by N., when you will be well clear of The Londoner, with fourteen fathoms. Then steer NW. by N. ½ N. nearly for Avery's Ledge buoy, carrying not less than six fathoms, and passing about two cables' length to the north-

Sailing Directions--Rockport Harbor. ward and eastward of Straitsmouth Island Light-house. On this course continue until this light-house bears **SW.** by **S.** and you are in six fathoms, hard bottom; when steer **W.** by **N.**, with not less than six fathoms, until the granite factory in Rockport bears **W SW.**, with eleven fathoms water, when steer for it, as before.

VIII. ***By the inside channel, between The Londoner and Thatcher's Island.***—With the light-houses on Thatcher's Island bearing **N.** by **E.**, steer for them until the spindle on The Londoner is visible, when shape the course so as to pass about midway between it and Thatcher's Island, in not less than five fathoms. There is three fathoms water close to the island; and when past its northern point, and Straitsmouth Island Light-house bears **NW.** by **N.** $\frac{3}{4}$ **N.**, and you are in seven fathoms water, steer **N.** by **W.** $\frac{1}{2}$ **W.**, carrying not less than six fathoms water. On this course, when past the light and it bears **SW.** by **S.**, with six fathoms water, steer **W.** by **N.**, and proceed as before directed. These courses pass nearly two hundred yards to the southward of Avery's Ledge.

Vessels beating to the northward, along the eastern shore of Cape Ann, may, when past Thatcher's Island, come within a quarter of a mile of the shore; but a good rule is not to go inside of the southwestern end of Straitsmouth Island bearing **N.** $\frac{1}{4}$ **W.**

Vessels standing inshore, to the northwestward of Straitsmouth Island, may approach within an eighth of a mile (two hundred and fifty yards) except in the vicinity of Mitchell's and Dodge's rocks, which will always show themselves by breakers, except the latter, which is always bare. These rocks should receive a berth of an eighth of a mile.

LIGHT-HOUSES.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Straitsmouth Island Light-house	42 39 43	70 35 18	4 42 21.2	Fixed.	33	11
Thatcher's Island Light-houses.. N.	42 38 19	70 34 30	4 42 18.0	Fixed.	165	20
Thatcher's Island Light-houses.. S.	42 38 11	70 34 30	4 42 18.0	Fixed.	165	20

TIDES.

Corrected Establishment	$10^h\ 57^m$
Mean Rise and Fall of tides	8.6 ft.
Mean Rise and Fall of Spring tides	9.3 ft.
Mean Rise and Fall of Neap tides	7.9 ft.
Mean duration of Rise	$6^h\ 16^m$
Mean duration of Fall	$6^h\ 9^m$
Rise of highest tide observed	10.1 ft.

CURRENTS.

No observations for direction and force of tidal currents have as yet been made in Rockport Harbor or its vicinity.

VARIATION OF THE COMPASS.

The variation of the magnetic needle for 1879 is 12° 30′ W., with a present annual increase of about 3′.

ICE IN ROCKPORT HARBOR.

The approaches to this harbor through Sandy Bay are so deep, and, moreover, so much exposed to the action of the sea and the full force of the wind, that ice is never formed of sufficient strength to become an obstruction to navigation. The Inner Harbor, however, is usually closed at times during the winter months by local formations, but these are of short duration; and during the cold winter of 1874–75 this portion of the harbor was only obstructed by ice during a part of the month of February.

MASSACHUSETTS BAY.

This extensive bay is contained between the two great headlands of Massachusetts, Cape Ann and Cape Cod. On a line joining these two capes it is thirty-eight miles wide, and its greatest length from this line to the main shore is twenty-two miles. Within its limits are contained the important harbors of Gloucester, Salem, Boston, Plymouth and Provincetown. The geographical position of the most northerly point of Massachusetts Bay is

Latitude ..... 42° 38′ 19″ N.
Longitude ..... 70° 34′ 30″ W. } Thatcher's Island Light-houses.

The position of the most southerly point is

Latitude ..... 42° 3′ 42″ N.
Longitude ..... 70° 14′ 36″ W. } Race Point Light-house.

Two subdivisions of this bay are **Boston Bay** and **Cape Cod Bay**,—the former, which is embraced between Nahant Head and Strawberry Point, being eleven miles wide and penetrating four miles into the land. The principal harbor within its limits is Boston Harbor, which includes the subordinate ports of Neponset, Weymouth, Hingham, Cambridge and Charlestown. Cape Cod Bay, which is contained between Race Point, the northernmost end of Cape Cod, on the east, and the entrance to Plymouth Harbor on the west, is semicircular in shape and about twenty-one miles in diameter. Within its limits are included the harbors of Provincetown, Truro, Wellfleet, Barnstable, Sandwich and Plymouth.

The shores of Cape Ann, the northernmost headland of Massachusetts Bay, have already been described, (see pages 528–530,) as have also those harbors which, being situated on the northern face of Cape Ann, do not belong to Massachusetts Bay.

GLOUCESTER HARBOR.

The first harbor met with in Massachusetts Bay, to the southward of Thatcher's Island, is about five miles to the southwestward of Emerson's Point, (which may be considered the most easterly point of Cape Ann,) and is called Gloucester Harbor. It is the headquarters of the fishing interests of Massachusetts, and is formed by an arm of the sea indenting the southern shore of Cape Ann. The entrance to it is in

Latitude ..... 42° 34′ 47″ N.
Longitude ..... 70° 40′ 30″ W.,

and is contained between Eastern Point on the east and a bluff rocky head, over one hundred feet high, called Norman's Woe, on the west. Between these two points it is a mile and a half wide; and beyond the entrance the cove continues of about the same width for a mile and a half to Ten-Pound Island, after passing which the harbor is much narrower,—the width between Fort Point and Rocky Neck being only four hundred yards. Norman's Woe has its eastern face thinly wooded with oak and pine, but the southern face is bare.

Norman's Woe.

The whole length of Gloucester Harbor is two miles and a half, and it lies in a **N NE.** and **S SW.** direction,—both shores of the harbor being much cut up by coves and indentations. Of these the most southerly is Norman's Woe Cove, on the western side of the approach, contained between Norman's Woe and Muscle Point, three-quarters of a mile above the entrance. The cove is shallow and has but little water in it; and a large bare rock, called **Norman's Woe Rock**, lies in the middle of its mouth. **Muscle Point** is of moderate height, bare of trees and sloping gradually to the water's edge.

Norman's Woe Cove.

From Muscle Point the western shore of the harbor has a general course **NE. ½ N.** for nearly three-quarters of a mile to the southern point of entrance to a wide but shallow cove, called Fresh Water Cove, which is irregular in shape, half a mile wide, and makes in no place over three hundred yards into the land. It is of little importance, (except for the fresh-water creek which empties into the southern basin,) as the anchorage is poor and the cove obstructed by ledges and sunken rocks. Its northern point is called **Stage Head**, and is sixty feet high, bare and rocky.

Fresh Water Cove.

To the northward of Stage Head the shore-line curves away first to the northward and then gradually to the eastward and southeastward,—the curve terminating at Fort Point. Thus a wide cove of semicircular shape is formed, in which good anchorage may be found in from two to four fathoms. It is sometimes known as Western Harbor, as part of the town is built on its northern shore. From Stage Head to the northward the shore of this cove diminishes in height, and marsh land begins about midway between the head and Fort Point. Through this marsh land a canal has been cut connecting the head waters of Squam River with Gloucester Harbor.

Western Harbor.

Fort Point, the easternmost point of Western Harbor, is also the western point of entrance to the Inner Harbor. It is bare, somewhat steep, of moderate height, and forms the southeastern end of a low sandy peninsula which juts out from the main shore at the western end of the town. An earth-work with flag-staff and barracks occupies the summit of the point, and is visible from the approaches outside of Eastern Point. The shores of Fort Point are tolerably bold-to.

Fort Point.

Beyond Fort Point lies the narrow and shoal cove called **Inner Harbor**, extending **NE.** and **SW.**, and a little over half a mile long. Its western shore is occupied entirely by the town of **Gloucester**.

On the eastern shore of Gloucester Harbor the point of entrance, which is called Eastern Point, (see page 529,) is the southernmost point of Cape Ann, and is an oval peninsula about three-quarters of a mile long in an **E NE.** and **W SW.** direction. Its surface is hilly and undulating, but its southeastern point is low and backed by a thick growth of oak, pine and other trees. On the very extremity, where a small hill with a steep face terminates the point, is built the light-house, which is called Eastern Point Light-house, and is the guide to Gloucester Harbor. This light-house is a white tower, thirty-three feet high, and shows a fixed red light, of the fourth order of Fresnel, from a height of sixty feet above sea-level, visible thirteen miles. Its geographical position is

Eastern Point and Light-house.

Latitude ..... 42° 34′ 47″ N.
Longitude ..... 70° 39′ 53″ W.

A covered way connects the tower with the keeper's dwelling; and there is a **fog-bell** in a wooden tower on the east side of the house.

To the northward of Eastern Point the shore-line forms a small shallow cove just back of the light-house, on the northern shore of which is a low wooded point separating it from Light-house Cove, a semicircular cove, quite shoal;—

Light-house Cove. on the southern side of which is the wharf belonging to the Light-house Department, where supplies for the light-house are landed. This cove is unobstructed, and vessels may come in anywhere between its northern and southern points. It is a quarter of a mile wide, and makes into the land three hundred yards; and its northern point, which is called Black Bess Point, is thirty feet high, bare and rocky. A long reef, bare at low water,

Black Bess Point. extends from it to the westward one hundred and fifty yards; and at the western end of this reef is a rocky islet, called **Black Bess**. At this point begins Southeast Harbor, which is contained between Black Bess Point on the south and Rocky Neck and Ten-Pound Island on the north.

Southeast Harbor is formed by a large cove indenting the eastern shore of Gloucester Harbor to the northward of Black Bess Point. Its northern boundaries are Ten-Pound Island and Rocky Neck; and between these and Black

Southeast Harbor. Bess good anchorage is found in from three to five fathoms at low water. Southeast Harbor is three-eighths of a mile wide, and makes into the land three hundred yards, with a smooth sandy beach. Its shores are bare of trees, undulating and thinly settled. This is the common anchorage for vessels not designing to go alongside the wharves.

Ten-Pound Island, which separates Southeast Harbor from the Inner Harbor, lies four hundred yards

Ten-Pound Island and Light-house. from the eastern shore of **Gilbert's Cove** and the same distance **W SW.** from Rocky Neck. It is bare, lies nearly **E.** and **W.**, is an eighth of a mile long and about thirty feet high. Near the western end is built a light-house known as Ten-Pound Island Light-house,—a white tower, twenty-five feet high, which shows a fixed white light, of the sixth order of Fresnel, from a height of fifty feet above sea-level, visible eleven miles. This light-house bears from

	Mile.
Fort Point, S. by W. ½ W	⅜
Eastern Point Light-house, S. by W	1½
Norman's Woe, NE. by E	2⅛
Stage Head, SW. ½ W	½

Passing Ten-Pound Island you come to the entrance to the Inner Harbor, which is between Fort Point on the west and Rocky Neck Island on the east. This is an irregularly-shaped island, lying off the eastern shore at a distance of two hundred yards, and separates Southeast Harbor from a large shallow cove in Inner Harbor, called Smith's Cove. Its southern point is a

Rocky Neck Island. quarter of a mile **E. ¼ N.** from Ten-Pound Island Light-house, and there is a shallow passage between the two islands, available only for light-draught vessels. The southern portion of Rocky Neck Island is low and bare of trees, but thickly settled, and a causeway connects it with the mainland, which is also thickly settled. The northern half of the island, which lies at right angles to the southern half, is called **Rocky Neck**, extends **NE.** by **E.** and **SW.** by **W.**, is sixty feet high, bare, and in some places precipitous. On the eastern side is Smith's Cove, contained between Rocky Neck and the mainland of Cape Ann; and on the western side is the narrow channel between Rocky Neck and Fort Point, leading into the Inner Harbor.

Smith's Cove is an eighth of a mile (two hundred and fifty yards) wide and a third of a mile long,

Smith's Cove. (six hundred yards,) but at low water it is bare for half of this distance. A settlement occupies the eastern shore of the cove,—its wharf-line forming the eastern point of entrance.

Inner Harbor. Inner Harbor has many small coves of which no detailed mention need be made. It is irregularly shaped, eleven hundred yards long and six hundred yards wide, and has a general direction about **NE.** and **SW.** The passage between Rocky Neck and Fort Point is, however, only three hundred and fifty yards wide.

The town of **Gloucester**, the headquarters of the fishermen of Massachusetts, occupies the western shore of the Inner Harbor,—fishing being almost the only support of the town. A small island, called Five-Pound Island,

Five-Pound Island. lies nearly in the middle of the Inner Harbor, a quarter of a mile **NE.** by **N.** from the northeastern end of Rocky Neck. It is nearly a hundred yards square, bare of trees, and about fifteen feet high, and its western shore is occupied by warehouses; but the rest of the island is unoccupied. Above Five-Pound Island there is no passage at low water; but there is a shallow channel between the island and the town through which six feet at low water may be carried.

DANGERS

IN APPROACHING AND ENTERING GLOUCESTER HARBOR.

Vessels approaching this harbor either from the eastward or southward will first encounter the

Eastern Point Ledge. long ledge off Eastern Point, called Eastern Point Ledge, which extends off from the light-house in a **SW.** direction a quarter of a mile. The shoalest water upon it is on *Webber's Rock*, which has seven feet at mean low water, and bears from the light-house **SW.** by **S.**, three hundred and fifty yards distant. This rock is sometimes called *Eastern Point Rock*, and is marked by a red spar-buoy (No. 2) placed in sixteen feet, rocky bottom, on the southern end of the rock.

Norman's Woe Rock. Norman's Woe Rock is not in the way of vessels standing in or out with a fair wind; but those beating to windward must not stand nearer to the western shore, between Norman's Woe and Muscle Point, than a quarter of a mile. This will avoid

GLOUCESTER HARBOR

MASSACHUSETTS

Scale 20,000

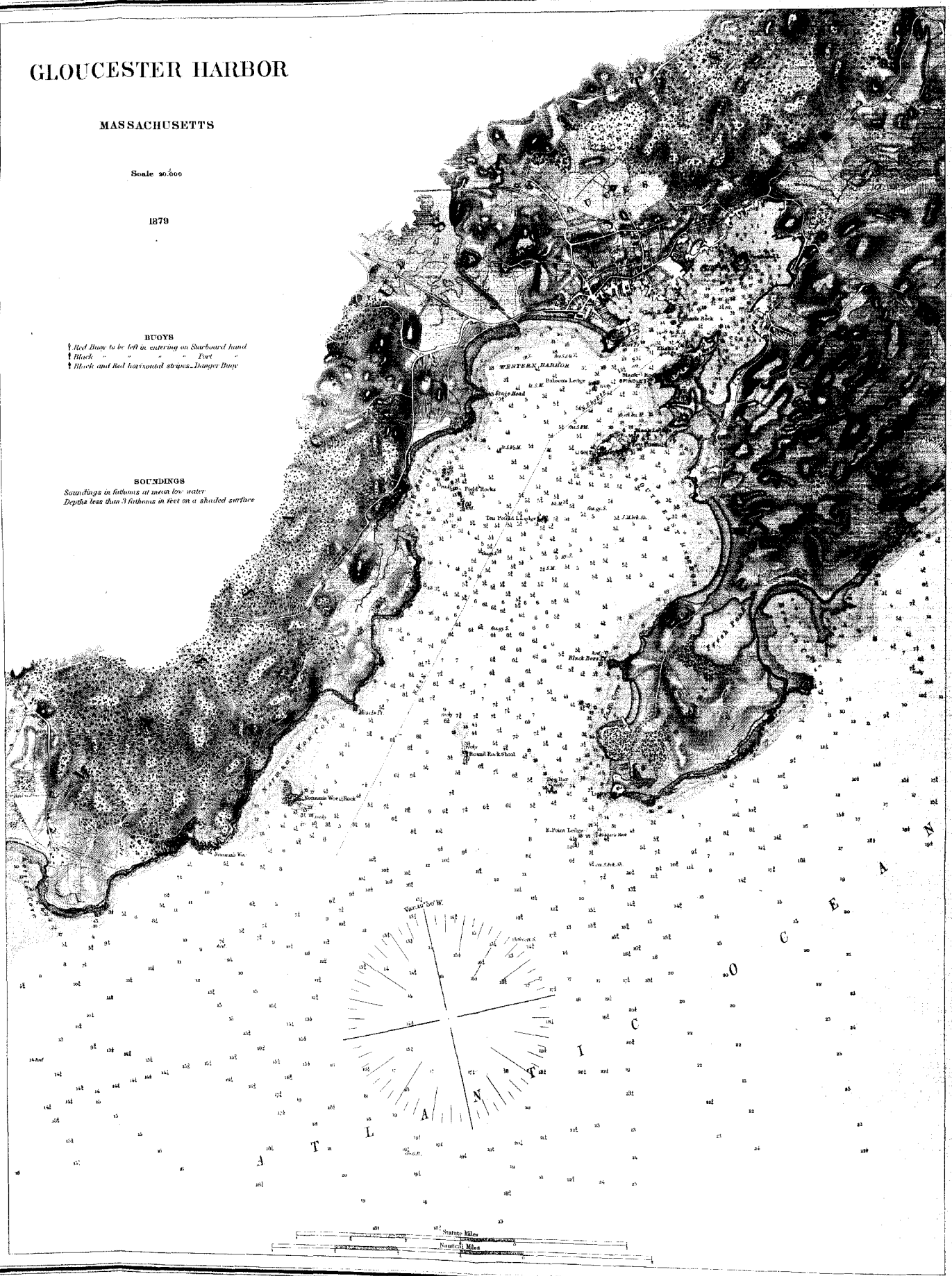
1879

BUOYS

Red Buoy to be left in entering on Starboard hand
Black " " " " Port "
Black and Red horizontal stripes_Danger Buoy

SOUNDINGS

Soundings in fathoms at mean low water
Depths less than 3 fathoms in feet on a shaded surface



Red.d Dr.n by J. Dasor & W.T. Martin.

Eng.d by G.B. Meteroth & J.L. Hazzard

Norman's Woe Rock, which lies three hundred yards from the shore of the cove and three-eighths of a mile ENE. from Norman's Woe. It is a bare rock, about a hundred yards square, surrounded by shoal water; and from its southern side the ledge makes off in a SSE. direction for an eighth of a mile, (two hundred and fifty yards.) *Dangers—Gloucester Harbor.*

Dog Bar is the first obstruction met with on the eastern side of the harbor after passing Eastern Point Ledge. It makes off from Eastern Point a little to the northward of the light-house, first in a westerly direction nearly four hundred yards, and then throws off a long spit about N NW. for three hundred yards farther. The least water on this spit is about sixteen feet at mean low water; but the inner shoal, or Dog Bar proper, is bare in some places at low water. A red spar-buoy (No. 4) is placed in fifteen feet off the end of the inner shoal, three hundred yards NW. by W. ¾ W. from Eastern Point Light-house; and vessels may cross Dog Bar in from sixteen to eighteen feet at low water by giving this buoy a berth to the eastward of two hundred yards. The northern end of the N NW. spit bears from the light-house NW. ½ W., distant seven hundred and fifty yards, and is six hundred yards from the nearest shore. *Dog Bar.*

On approaching Dog Bar there will be seen on the port hand, nearly abreast of Dog Bar buoy, a black spar-buoy. This is on Round Rock Shoal, which lies almost in the middle of the entrance, in line between Eastern Point Light-house and Muscle Point. It is a ledge with eleven feet at lowest tides, lying in a N. and S. direction and nearly three hundred yards long. A black spar-buoy (No. 1) is placed on the southern end of the shoal in three and a half fathoms, and bears NW. by W. ¾ W. from Eastern Point Light-house, from which it is distant nearly two-thirds of a mile. When at the buoy, the light-house and Dog Bar buoy are in range, and the easternmost church-steeple in Gloucester is just open to the westward of Ten-Pound Island Light-house. The channel between this buoy and the N NW. spit of Dog Bar is a quarter of a mile wide and has from five to seven fathoms at mean low water. *Round Rock Shoal.*

After passing Round Rock Shoal there are no dangers in the channel until you are past Black Bess Point and approach Ten-Pound Island. A red spar-buoy will then be seen lying SW. from the island, nearly in the middle of the passage. It is on Ten-Pound Island Ledge, which has nine feet at low water, and lies one-third of a mile SW. ½ W. from Ten-Pound Island Light-house. It is a detached rock of small extent, and there is good water on both sides of it; but the best water is, however, to the westward of the buoy, although from three to five fathoms may safely be taken between the ledge and Ten-Pound Island through a wide channel. The buoy, which is marked No. 6, is placed in three fathoms on the western side of the ledge, and is usually left to the eastward. *Ten-Pound Island Ledge.*

Field Rocks, sometimes called *Fresh Water Cove Ledges*, are a group of rocks on the western side of the channel, lying off the middle of the entrance to Fresh Water Cove and nearly abreast of Ten-Pound Island Ledge. They run N. and S., and the southern end of the reef is five hundred yards from shore. Several of the rocks are bare at low water and others have five and six feet upon them. This group divides the cove into two parts,—there being from twelve to fifteen feet water on either side of the rocks. A black spar-buoy, marked No. 3, is placed in fifteen feet off the southern end of the rocks, and bears from *Field Rocks.*

	Mile.
Stage Head, S SW.	½
Fort Point, SW. by W.	¾
Ten-Pound Island Light-house, W. by S.	nearly ⅔
Ten-Pound Island Ledge, W. by N. ½ N.	⅓

The channel between Field Rocks buoy and Ten-Pound Island Ledge buoy is nearly six hundred yards wide, with from three to six fathoms water.

After passing Ten-Pound Island Light-house you come next to Babson's Ledge, which lies SW. by S. from Fort Point, three hundred yards distant, has ten feet at mean low water, and obstructs the entrance to the Inner Harbor and also Western Harbor entrance. From Ten-Pound Island Light-house it bears N. ½ E., a quarter of a mile distant. A black spar-buoy (No. 5) is placed in fifteen feet on the southeastern side of the ledge, and nineteen feet water is found between it and Fort Point; but the channel is narrow and unsafe. *Babson's Ledge.*

When up with Babson's Ledge, an iron spindle with a cage on top (the whole painted red) will be seen on the eastern side of the channel, off the western point of Rocky Neck. This is on Black Rock, dry at half-tide and one hundred and fifty yards from shore. The channel leads directly between this beacon and Babson's Ledge buoy, and is nearly four hundred yards wide; but the beacon must receive a berth of one hundred and fifty yards to the eastward. *Black Rock.*

The current of ebb, which is quite strong through the narrow passage leading between Fort Point and Rocky Neck into the Inner Harbor, sets strongly on to Black Rock, and mariners must govern themselves accordingly.

Pinnacle Rock, sometimes called *Nine Feet Rock*, lies in the Inner Harbor, nearly three hundred yards **E.** from **Fort Point Wharf** and three hundred and fifty yards **NW.** by **W.** ½ **W.** from the northeastern end of Rocky Neck. It is a sunken rock with nine feet at mean low water and seven feet at lowest tides; but the shoalest part of the rock is only about six feet square and there is from two to three fathoms all around it.

Pinnacle Rock.

On the southeastern side of the harbor, about a hundred yards to the northward of the shore of Rocky Neck, is Elisha's Ledge, dry at low water. It is nearly opposite to Pinnacle Rock; and on its northwestern side is placed a red spar-buoy (No. 8) in three and a half fathoms at low water. This buoy is three hundred yards **SE.** by **S.** ¼ **S.** from Pinnacle Rock,—the channel passing directly between them.

Elisha's Ledge.

After passing between Pinnacle Rock and Elisha's Ledge you must look out for *Harbor Rock*, bare at half-tide, and one hundred yards **NE.** from Pinnacle Rock. From the long wharf **E NE.** from Fort Point it bears **S.** by **E.** ½ **E.**, fifty yards distant. It is a detached rock,—four and five feet at mean low water being found inshore of it,—and it is sometimes called *Spindle Rock*.

One hundred yards **NE.** by **E.** from Harbor Rock is a sunken rock, with six feet at low water, called *Little Harbor Rock*. After passing it there are no dangers until you are near Five-Pound Island, when there will be seen off the southwestern end of the island a granite beacon with an iron spindle and ball, painted red, on top. This is on Five-Pound Island Ledge, which lies eighty yards **W.** from the island, is bare at half-tide, and is to be left to the eastward with a berth of one hundred yards. The channel is here narrow and shoal, and only vessels of light draught can pass at low water as high up as Five-Pound Island.

Five-Pound Island Ledge.

There is a shallow passage between Ten-Pound Island and Rocky Neck, the only obstruction in which is Black Ledge, sometimes called *Black Rock*, lying between Ten-Pound Island and the southern end of Rocky Neck Island, a little over two hundred yards from the latter, and bare at low water. Vessels of light draught frequently use this channel after half-flood, and eight feet at mean low water can be taken through. This Black Ledge must not be confounded with Black Rock, near the western point of Rocky Neck, and which is marked by a spindle.

Black Ledge.

Clam Rock is a detached rock, dry at low water, situated in the mouth of Gilbert's Cove, on the eastern side of Fort Point. Clam Rock is an eighth of a mile **W.** from Harbor Rock and nearly two hundred yards **NW.** by **W.** ¾ **W.** from Pinnacle Rock.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING GLOUCESTER HARBOR.

I. ***Coming from the Northward.***—The course from Thatcher's Island, when clear of The Londoner, is **SW.** by **W.** ½ **W.**, five miles, until Eastern Point Light-house bears nearly **N.**, with seventeen fathoms water; when haul up **NW.** by **W.** ½ **W.**, keeping about half a mile from shore to avoid Eastern Point Ledge and Webber's Rock, and carrying not less than twelve fathoms. On this course, when Ten-Pound Island Light-house bears **NE.** by **N.** ½ **N.**, steer for it, carrying not less than five fathoms, until you are within half a mile of it, when, *if bound into Southeast Harbor*, steer **E.** by **N.** ½ **N.**, and anchor in five or six fathoms, muddy bottom. *But if bound up to town*, continue the course for Ten-Pound Island Light-house until you are within a quarter of a mile of it and in five and a quarter fathoms. You will now be past Ten-Pound Island Ledge (which is left to the westward) and must steer **N.** by **W.**, with not less than five fathoms, until the light-house bears **E SE.**, four hundred yards distant, and you are in five and a half fathoms; when steer **NE.** by **E.** ¼ **E.**, carrying not less than four fathoms water through the narrows between Fort Point and Rocky Neck, and anchor abreast of the town in from three to four fathoms, sticky bottom. *Or, if intending to anchor in Western Harbor*, when within a quarter of a mile of Ten-Pound Island Light-house, (as before,) continue the course **N.** by **W.** past the island and up into the cove, where anchor, according to draught, in from two to four fathoms.

The above courses pass six hundred yards to the southward of Webber's Rock; a quarter of a mile to the westward of Dog Bar buoy; one hundred and fifty yards to the westward of the northern point of the **N NW.** spit of Dog Bar; three hundred yards to the eastward of Round Rock Shoal; two hundred and fifty yards to the eastward of Ten-Pound Island Ledge; one hundred and fifty yards to the southeastward of Babson's Ledge; one hundred yards to the northward of the beacon on Black Rock; fifty yards to the northward of Elisha's Ledge; and one hundred and fifty yards to the southward of Pinnacle Rock.

If you desire to pass on the western side of Ten-Pound Island Ledge, steer the following courses: On the course **NW.** by **W.** ½ **W.**, when Ten-Pound Island Light-house bears **NE.** by **N.** ½ **N.**, steer **N.** by **E.** ½ **E.**, carrying nothing less than five fathoms water. This course leads straight into Western Harbor. *But, if bound into the Inner Harbor,* when Ten-Pound Island Light-house bears **E.**, with five and a quarter fathoms, steer **NE.** by **E.** ¾ **E.** through the narrows, with not less than four fathoms, and anchor off the town as before.

II. ***Coming from the Southward, to enter Southeast Harbor.***—When Eastern Point Light-house bears **NE.** ½ **E.**, one mile distant, and Norman's Woe **NW.**, Ten-Pound Island Light-house will bear **NE.** by **N.** ½ **N.**, and there will be fifteen fathoms water. Steer for Ten-Pound Island Light-house until within half a mile of it, and you are in five and a half fathoms; when steer **E.** by **N.** ½ **N.** for the beach, and anchor in five or six fathoms, sand, mud and broken shells.

III. ***To enter Inner Harbor from the Westward.***—Bring Ten-Pound Island Light-house to bear **NE.**, with nine fathoms water, and steer **NE.** ½ **N.**, passing between Round Rock Shoal and Muscle Point, and about midway between Ten-Pound Island Ledge and the Field Rocks, and carrying not less than five and a half fathoms. On this course, when Ten-Pound Island Light-house bears **E SE.**, four hundred yards distant, steer **NE.** by **E.** ¾ **E.** through the narrows as before.

The above courses pass a quarter of a mile to the eastward of Norman's Woe Rock; a quarter of a mile to the westward of Round Rock Shoal; three hundred and fifty yards to the eastward of Field Rocks buoy; an eighth of a mile (two hundred and fifty yards) to the westward of Ten-Pound Island Ledge; a hundred and fifty yards to the southeastward of Babson's Ledge; one hundred yards to the northward of the beacon on Black Rock; fifty yards to the northward of Elisha's Ledge; and one hundred and fifty yards to the southward of Pinnacle Rock.

LIGHT-HOUSES.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Eastern Point Light-house	42 34 47	70 39 53	4 42 39.5	Fixed.	60	13
Ten-Pound Island Light-house	42 36 5	70 39 56	4 42 39.7	Fixed.	50	13

TIDES.

Corrected Establishment	11h 2m
Mean Rise and Fall of tides	9.1 ft.
Mean Rise and Fall of Spring tides	10.1 ft.
Mean Rise and Fall of Neap tides	8.5 ft.
Mean duration of Rise	6h 24m
Mean duration of Fall	6h 1m
Rise of highest tide observed	10.9 ft.

CURRENTS.

No complete set of current observations has been made at this port. The tidal current will not to any great degree interfere with the movements of vessels, as it sets directly in and out of the harbor and its velocity is comparatively small. In the narrows, however, between Fort Point and Rocky Neck, the current is strong, especially at half-ebb, and the current of ebb sets on to Black Rock. Vessels coming out on the ebb hug the northwestern side of the channel until they are past the beacon on this ledge. The ebb current also sets on to Ten-Pound Island; but the courses given in the sailing directions allow a sufficient berth, and, if made good, will lead safely by.

VARIATION OF THE COMPASS.

The variation of the magnetic needle for 1879 is 12° 47′ W., with an annual increase of about 3′.

ICE IN GLOUCESTER HARBOR.

The formations of ice in this harbor, which are principally local in their character, were more extensive and of longer duration during the winter of 1874–75 than had before occurred within the memory of the oldest inhabitants. In that remarkably cold winter the ice commenced to form early in the month of January and continued to increase in extent and thickness until about the fourth of March,—forming a most complete barrier to the progress of sailing-vessels (without the assistance of tug-boats) from the 14th of January to the 4th of March, at which latter date a strong NE. gale had succeeded in clearing the harbor of a large portion of the obstruction. During this period of the ice-blockade steamers could only enter through a narrow

channel kept open by the efforts of the tug-boats, which were specially employed for that purpose by the city authorities. The anchorages on both sides of the harbor were also closed during the existence of the formations with the exception of Light-house Cove, (just inside Eastern Point,) which could be reached at any time by sailing-vessels, although their movements were much retarded by the ice, which extended some distance beyond the point but was not heavy enough to endanger the safety of vessels.

There is no appreciable tidal current in Gloucester Harbor, and the movements of the ice formations, therefore, are effected only by the winds. This fact accounts in a great measure for the long duration of the obstructions mentioned above, as the direction of the harbor is such that the prevailing winds from the **NW.** have a tendency to prevent any ice formations from leaving the harbor; while strong winds from **NE.** to **E.** have an opposite effect,—clearing the harbor of all formations within a comparatively short time. This was clearly shown by the **NE.** gale, which, beginning on the 2d and continuing until the 5th of March, cleared the harbor of a very large portion of the ice and effectually removed all obstructions to navigation of that character.

SHORES OF MASSACHUSETTS BAY FROM GLOUCESTER TO MANCHESTER ENTRANCE.

From Norman's Woe the coast runs about **W.** by **S.** a little over a mile to Kettle Cove, off which lies a small island, called **Kettle Island**, which is about three hundred yards from Goldsmith's Point, and is thirty feet high and bare of trees. Between Norman's Woe and Goldsmith's Point the land is composed of high and well-wooded hills, which, in most cases, come down to the shore; but on the eastern side of Kettle Cove they retreat back from the shore-line, leaving a very gently sloping surface, cleared and under cultivation. There is a small settlement on the eastern shore of Kettle Cove.

Kettle Cove.

To the westward of Kettle Island three-quarters of a mile lies a small, bare, rocky islet, called **Great Egg Rock.**

Goldsmith's Point is bare, sixty feet high, and somewhat steep; and to the westward of it the shore runs **W. ½ S.** for two miles and a quarter to Gale's Point, the southeastern point of entrance to Manchester Harbor. The shore-line between these two points is very much cut up by small coves and indentations, some of which are available for light-draught vessels. The land is diversified with hills and low lands,—sometimes low and marshy, sometimes high and wooded, in some places carefully cultivated and in others rocky and bare. The coves uniformly have smooth sandy or shingly beaches, and the points and small headlands have a rocky and steep sea-front.

Goldsmith's Point.

About one-third of the way from Goldsmith's Point to Gale's Point, and a hundred and fifty yards from the shore, lies a small wooded island, called **Graves' Island,** which at low water is connected with the shore.

Gale's Point is the western end of a peninsula making off in a southwesterly direction from the mainland, two miles and a quarter **W. ½ S.** from Goldsmith's Point and a little over four and a half miles from Eastern Point. It is hilly and undulating,—its highest point being about one hundred feet above sea-level. This high summit is, however, some distance back from the shore-line,—that part of the point near the water being much lower, from twenty to forty feet high, bare of trees and covered with grass.

Gale's Point.

Long shoals extend from Gale's Point to the southwestward, embracing within their limits three islets, called Ram Islands and House Island. Ram Islands are small and lie close to the shore,—the larger being wooded, about one hundred yards in diameter, and lying one hundred yards **W.** from Gale's Point, with which it is connected at low water; while the other islet is bare of trees and grassy. **House Island,** which lies four hundred yards **S SW.** from Gale's Point, is a little over two hundred yards long and quite low, and there are a few trees on the summit.

Ram Islands.

Nearly half a mile **W. ¼ S.** from House Island lies a high bare island, called Great Misery Island, the entrance to Manchester Harbor lying on its eastern side, between it and House Island, while the Main Ship-Channel into Salem Harbor leads between Great Misery and an island three-quarters of a mile **S SE.** from it, called Baker's Island. Great Misery is irregular in shape, high and bare, lies **E SE.** and **W NW.,** and is about a third of a mile long and a quarter of a mile wide. Its surface is somewhat undulating,—being sixty feet above sea-level at the eastern and western ends and only twenty feet high in the middle.

Great Misery Island.

Little Misery Island is a bare rocky islet, lying to the southward of Great Misery, from which it is separated by a passage fifty yards wide. It extends **E.** and **W.,** and is two hundred and fifty yards long and about twenty feet high.

Baker's Island, which lies on the southern side of the main entrance to Salem Harbor, is three-quarters of a mile **S SE.** from Great Misery, and is irregular in shape and bare of trees. Its surface is grassy and the sea-face somewhat precipitous, and the highest land is about forty feet above sea-level. On the northern end of the island stand two light-towers, called Baker's Island Light-houses,—the guides to Salem and Manchester harbors. These towers are white, and stand **NW.** and **SE.** from each other, forty feet apart. The northwestern tower is octagonal, fifty-two feet high, and shows a fixed white light, of the fourth order of Fresnel, from a height of eighty-seven feet above sea-level, visible fifteen miles. The southeastern tower is round, twenty-nine feet high, and shows a fixed white light, of the fourth order of Fresnel, from a height of sixty-four feet above the sea, visible fourteen miles. A bell-frame with fog-bell stands to the northward of the eastern light-house, and is painted red, as are also the lanterns of the light-towers. The geographical position of these light-houses is

Baker's Island and Light-houses.

Latitude ..... **42° 32′ 10″ N.**
Longitude ..... **70° 47′ 10″ W.**

The houses and offices of the keepers' dwellings are the only buildings on the island.

This small harbor is formed by an arm of the bay extending behind Gale's Point in a northeasterly direction for a mile to the village of **Manchester**. The western point of entrance is a high precipitous head, called **Glass Head**; and between this head and Gale's Point the entrance to the harbor is six hundred yards wide. Behind Glass Head a wooded hill rises to the height of one hundred and fifteen feet.

Proctor's Point is on the eastern shore of Manchester Harbor, a third of a mile above Gale's Point, and directly opposite to Glass Head. It is low and sandy, and forms the northern end of a shallow cove contained between it and Gale's Point; and the harbor here is not quite two hundred yards wide. The land behind this point rises to a height of eighty feet and has a few trees upon it; but above it the shores are mostly low, cleared, cultivated and settled, and the shore-line is formed by a fringe of salt-meadow. **Proctor's Point.**

On the western bank, above Glass Head, the shores near the water are mostly low,—the hills lying some distance inland and well wooded. The village occupies the low land lying between the hills and the water.

The main course of the arm of the bay which forms Manchester Harbor is **NE.** above Proctor's Point; but the shore-line is much cut up by coves and small streams. The Inner Harbor is almost entirely bare at low water, and is of little importance. There are, however, very good roads for anchorage off the entrance, between Great Misery and House islands and the main shore to the westward of Glass Head. Mariners desiring to anchor for the night or in head-winds may here find fair holding-ground and good shelter except in southerly gales. The anchorage is two-thirds of a mile wide, and has from three to six fathoms at mean low water, soft bottom. **Inner Harbor.**

DANGERS

IN APPROACHING AND ENTERING MANCHESTER HARBOR.

Coming alongshore, as from Gloucester, when past Kettle Island, there will be seen ahead Great Egg Rock,—a bare rocky islet, lying nearly two-thirds of a mile **W.** from Kettle Island and three-quarters of a mile from shore. On its southern side it is quite bold-to; but shoal water extends from its northern end three hundred and fifty yards in a **N.** by **W.** direction. At this distance from the rock there is a reef, dry at low water and not buoyed; and vessels should not attempt to pass between Great Egg Rock and the shore. ***Great Egg Rock.***

Vessels beating to windward in this vicinity sometimes find it convenient to make short tacks close inshore. In such case, when to the westward of Great Egg Rock, look out for Salt Rock, which lies three-quarters of a mile **W.** by **N.** from Great Egg Rock and six hundred yards from shore. It is bare and is not buoyed; and a quarter of a mile **NW.** by **W.** from it and an eighth of a mile from shore is a bare rocky islet, called **Little Egg Rock.** ***Salt Rock.***

Vessels bound from the eastward either for Manchester or Salem Harbor will see, on approaching the entrance to the Main Ship Channel, a red spar-buoy bearing about **W.** by **N.**, which is on Gale's Ledge, an obstruction common to Salem and Manchester harbors. It is a very dangerous ledge, with four feet at mean low water and only two feet at low spring tides; and from Baker's Island Light-houses it bears **NE.** by **E.** ½ **E.**, one mile and a quarter distant. The buoy is marked No. 2, and is placed in three and a half fathoms on the southern side of the ledge. ***Gale's Ledge.***

Only a quarter of a mile to the westward of Gale's Ledge lies *Pilgrim Ledge*, which has nineteen feet at low water, and bears from Baker's Island Light-houses **NE.** ¾ **E.**, a little over one mile distant. It is easily avoided by not standing to the northward of the buoy on Gale's Ledge bearing **E.**

After passing Pilgrim Ledge and heading up for the entrance to Manchester, an iron spindle, with cage on top, will appear about half a mile to the westward. This is on The Whale's Back, a dangerous ledge, dry at three-quarters ebb, which lies directly in the passage into Manchester Harbor,—being a quarter of a mile **S SW.** from House Island and three-eighths of a mile **E.** from Great Misery Island. It extends in a **N NE.** and **S SW.** direction, is three hundred yards long, and bare at low water near the middle and at the northern end. The spindle, which is painted red, is placed on the eastern side of the dry ledge, and from it the south-western point of Little Misery is in range with Bowditch's Ledge Beacon. (See dangers in Salem Harbor.) Vessels bound into Manchester Harbor may pass close to this spindle, leaving it to the northward; but those of light draught may go across the tail of the ledge by leaving the spindle to the southward and westward and keeping close to it. No stranger must ever attempt this, however. ***The Whale's Back.***

After passing The Whale's Back, a black spar-buoy will be seen to the northward, off the eastern shore of Great Misery. This is on Sauli's Rock, a small bare rock, surrounded by a ledge dry at low water, and lying three hundred yards **E.** by **N.** from the northeastern point of Great Misery; **W.** ¼ **N.** from the summit of House Island; and **N.** from Baker's Island Light-houses, one mile distant. There is from three to five fathoms water on all sides of this ledge, which is a little over one hundred yards square. A black spar-buoy (No. 1) with a pronged top is placed in three and a half fathoms off the southern end of the ledge and about seventy-five yards from the dry rock. ***Sauli's Rock.***

On the eastern side of the channel, about **NE.** by **E.** from Sauli's Rock and two hundred and fifty yards (an eighth of a mile) **SW.** by **W.** from Ram Islands, lies a small rock, dry at low water, called White's Ledge. It is in reality the southwestern extremity of a mass of ledges and rocks, bare at low water, extending off from the Ram Islands, and nearly closing the passage between them and House Island. There is, however, a narrow passage at high water, but it is unsafe. A red spar-buoy (No. 2) is placed in fifteen feet on the western side of White's Ledge,—the channel passing between it and the black buoy on Sauli's Rock with a width of a quarter of a mile. Beyond White's Ledge the water shoals gradually, and the lead will be the best guide.

White's Ledge.

A bare rocky islet, called Chubb's Island, lies off the main shore in the outer roads, and three-quarters of a mile to the westward of Glass Head. It is surrounded by ledges bare at low water, and has a single hut upon it, which bears **N.** by **W.** ¼ **W.** from Sauli's Rock, about five-eighths of a mile distant.

Chubb's Island.

Pride's Rock, or *Ober's Ledge*, is a small ledge, bare at low spring tides, which lies in the passage between the mainland (here called **West Beach**) and Great Misery Island, and is about an eighth of a mile from shore. It is only in the way of vessels standing to the westward through this passage, or bound into Manchester from Salem or Beverly; and thirteen feet at low water may be carried through by passing about midway between this rock and the northwestern end of Great Misery. A red spar-buoy (No. 2) is placed on the southern side of Pride's Rock in fifteen feet water, and must receive a berth to the northward of about one hundred yards.

Pride's Rock.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MANCHESTER HARBOR.

Bring Little Misery Island to bear **W NW.** and steer for it, carrying nothing less than ten fathoms water, until Baker's Island Light-houses bear **S.** by **E.** and you are about half a mile distant, when there will be ten fathoms, hard bottom. Then steer **N.** by **E.** ½ **E.** for the high wooded hill a little to the westward of Glass Head. On this course there is nothing less than five fathoms, and when past Sauli's Rock buoy, *if intending to anchor in the roads*, steer for Chubb's Island, (about **N NW.**,) and anchor at pleasure, in from three to six fathoms, hard sand. *If bound up to the village*, continue to steer **N.** by **E.** ½ **E.** until the northernmost of the two Ram Islands (which is wooded) bears **E.** by **S.** ¼ **S.** There will then be eighteen feet at low water, and no attempt must be made to go farther without a pilot, as the channel is a mere thread at low water and is quite crooked. The best water is close to Proctor's Point; after passing which it takes nearly the middle of the passage until up with the next point above Proctor's Point, on the eastern shore. An inspection of the chart will give the best idea of its windings; and none but those thoroughly acquainted with the channel ever attempt to enter the inner harbor.

The above courses pass five-eighths of a mile (twelve hundred yards) to the southward of Gale's and Pilgrim ledges; an eighth of a mile (two hundred and fifty yards) to the westward of The Whale's Back; two hundred yards to the eastward of Sauli's Rock; and an eighth of a mile to the westward of White's Ledge.

SALEM HARBOR.

This harbor is at the western end of a large, irregular and deep indentation in the shores of Massachusetts Bay, and is situated eleven miles to the southwestward of Cape Ann (Thatcher's Island) and twelve miles to the northward of Boston Entrance. The entrance by the Main Ship Channel is in

Latitude ..... **42° 32′ 20″ N.**
Longitude ..... **70° 47′ 0″ W.,**

and is five miles and a quarter **W.** by **S.** from Gloucester Entrance. Gale's Point (before described) on the northeast, and Marblehead Neck on the southwest, respectively, form the northern and southern points of the entrance to this large cove or indentation, which includes within its limits the harbors of Manchester, Beverly, Salem and Marblehead,—the distance between the two points being four miles. This wide space is studded with islands, bare rocks and sunken ledges, through and among which lead the several channels into the harbors.

Three channels lead into Salem Harbor, and all are equally good and either may be taken, according to the position when falling in with Baker's Island Light-houses. The most northerly is called the **Main Ship Channel**, and the entrance to it is between Great Misery Island and Baker's Island. To the southwestward of Baker's Island lie two bare rocky islets, called **The Gooseberries**, and a mile and a quarter **SW.** of these is a long narrow island, with a large hotel upon it surmounted by a cupola. This is **Cat Island**, or **Lowell's Island**; and the entrance to the second channel into Salem Harbor is contained between it and The Gooseberries, and is called **Cat Island Channel**. The third channel into this harbor is called the **Marblehead Channel**, or **Western Channel**, and is contained between Marblehead Neck and Cat Island. The Main Ship Channel will be the first described, including the northern shore of the harbor and the islands lying in the approach by this channel.

Channels into Salem Harbor.

MAIN SHIP CHANNEL.

The approach by this channel is between Great Misery Island on the north and Baker's Island on the south. Great Misery Island, which has been already described on page 542, is irregular in shape, high and bare, and about a third of a mile long in an **E SE** and **W NW.** direction, with an undulating surface. Its eastern and western heads are sixty feet high, but the centre of the island is only twenty feet above sea-level, and has a single dwelling upon it. Baker's Island is three-quarters of a mile **S SE.** from Great Misery. **Great Misery Island.**

Little Misery Island, which lies fifty yards to the southward of Great Misery, is a bare rocky islet, lying **E.** and **W.,** an eighth of a mile long and twenty feet high.

Baker's Island lies on the southern side of the Main Ship Channel, three-quarters of a mile **S SE.** from Great Misery, and is grassy, with a somewhat precipitous sea-face. The highest point is about forty feet above the sea; and on the northern end of the island stand two light-houses, the guides to Salem and Manchester harbors. They are white, and stand **NW.** and **SE.** from each other, forty feet apart. The northwestern tower is octagonal, fifty-two feet high, and shows a fixed white light, of the fourth order of Fresnel, from a height of eighty-seven feet above the sea, visible fifteen miles. The southeastern tower is round, twenty-nine feet high, and shows a fixed white light, of the same order, from a height of sixty-four feet above the sea, visible fourteen miles. A bell-frame, with **fog-bell,** stands to the northward of the eastern light-house, and is painted red, as are also the lanterns on the towers. The geographical position of Baker's Island Light-houses is **Baker's Island and Light-houses.**

Latitude	**42° 32′ 10″ N.**
Longitude	**70° 47′ 10″ W.**

The houses and offices of the keepers' dwellings are the only buildings on the island. (See page 542.)

The northern shore-line of the bay which forms the **Outer Harbor** of Salem has a general direction **E.** and **W.,** but is much cut up by small coves, some of which afford anchorage. The small settlement called **Beverly Farms,** or **West Beach Village,** lies on this shore just to the westward of Manchester Harbor and three-quarters of a mile **N NW.** from Great Misery. The lands in the vicinity of the village are all cleared and cultivated. To the westward of Beverly Farms wooded land and cultivated fields appear alternately; and houses dot the slopes of the hills, which are here very gradual in their rise. Nearly all the projecting points of land on this shore are low and cleared, with woodland behind them.

Allen's Head, a mile and a half to the westward of Glass Head, is occupied by an orchard; but behind it the land is wooded and rises to heights varying from ninety to a hundred and twenty-five feet above sea-level. Half a mile to the westward of Allen's Head is **Smith's Point,** low cleared land, with a rocky face on the harbor side. It is mostly grass-land, with wooded hills behind it and a few houses a little way back from the shore. **Allen's Head.**

Curtis' Point lies half a mile to the westward of Smith's Point, and is the eastern point of entrance to a shallow cove, called Beverly Cove. The general features of the land are the same as those to the eastward,—being low, cleared and cultivated shores, with wooded hills behind them. Curtis' Point is thirty feet high, and composed of grass-land. **Beverly Cove** is contained between this point on the east and Hospital Point on the west. Its shores are under fine cultivation, bare of all trees except fruit trees, and varying in height from twenty to forty feet. **Curtis' Point.**

Hospital Point, the western point of Beverly Cove, is about forty-five feet high, grassy and bare of trees; and on this point is placed a light-house as a range for the Main Ship Channel. It is a pyramidal brick tower, whitewashed, and showing a fixed white light (order of Fresnel three-and-a-half) from a height of thirty-nine feet above sea-level, visible thirteen miles. A lens-panel is placed in the line of the centre of the Main Ship Channel, making a more brilliant fixed light on that line than on either side of it, and serves to guide vessels in mid-channel clear of dangers on either side. Its geographical position is **Hospital Point and Light-house.**

Latitude	**42° 32′ 48″ N.**
Longitude	**70° 51′ 22″ W.**

A quarter of a mile to the westward of Hospital Point is Woodberry's Point, long and low, with a few scattered trees and houses upon it. Here the shore turns away to the northward and westward, forming a long shallow cove called **Mackerel Cove,** which washes the eastern side of the town of Beverly. It is bare at low water, and its shores are low, cultivated and well settled up to the outskirts of the town. **Tuck's Point,** a low sandy point, with groups of houses upon it, is the western point of entrance to the cove. **Woodberry's Point.**

Tuck's Point forms also the northern point of entrance to Beverly Harbor, which is formed by the confluence of Essex Branch, Beverly Creek and North River,—three small streams which unite at this point and form a basin of irregular shape, on the northern shore of which is built the town of **Beverly.** **Essex Branch** has a general course **SE.** from **Danvers New Mills,** nearly a mile and a half above its mouth. **Beverly Creek** has a general course **S SW.,** and washes the western shore of the peninsula of Beverly. **North River** has a **NE.** course, and separates the city of Salem from **North Salem.** **Beverly Harbor.**

On the southern side of Beverly Harbor, and separating it from the Inner Harbor of Salem, is a peninsula of irregular shape, which lies **NE.** by **E.** and **SW.** by **W.,** and is nearly a mile long. This is called Salem Neck; and its northern point is known as **Old Hospital Point,** and is the southern point of entrance to Beverly Harbor. A narrow isthmus connects Salem Neck with the town, and over this isthmus the houses are extending. There are **Salem Neck.**

many fine elms and other ornamental trees planted on this narrow strip, but Salem Neck itself is rocky and bare, except that here and there over its southern face a few elms and maples appear. On its summit is built **Fort Lee**, an earthwork with two or three barrack buildings attached to it. The **City Almshouse** occupies the southwestern point of Salem Neck and is readily recognized,—being of brick, which is painted a very ugly red color. It presents the appearance of a block of houses, and is surrounded by ornamental trees.

Collins' Cove. Between Salem Neck and North River is another peninsula, now covered by the town houses; and on the eastern side of this peninsula, between it and Salem Neck, is a large cove, called Collins' Cove, which washes the northern side of the town of Salem. It is nearly all dry at low water, and forms the southern part of Beverly Harbor; and the Almshouse landing is on its eastern shore.

Juniper Point, which is the northeastern point of Salem Neck, is of moderate height, and easily recognized by its thickly-clustered houses.

Winter Island. Winter Island, which lies at the entrance to Salem Harbor proper, is three-eighths of a mile long in a **N NE.** and **S SW.** direction, and is grassy and bare of trees. It lies along the southeastern face of Salem Neck, with which a narrow strip of salt-meadow connects its northern end,—this strip being crossed by a causeway about a hundred yards long. On its southeastern point, called **Fort Point**, is built **Fort Pickering**, which defends the Inner Harbor. Barracks are attached to the fort, but there are no other buildings on the island.

On the northern side of Winter Island, between it and Salem Neck, is a small cove, called **Juniper Cove**, of little importance; and on its western side another cove is formed between the island and Salem Neck, called **Cat Cove**, also of little importance.

Fort Pickering Light-house. On a bare rock on the eastern extremity of Fort Point is built a light-tower called Fort Pickering Light-house. It is twenty-three feet high, and shows a fixed white light, of the sixth order of Fresnel, from a height of thirty-two feet above the sea, visible ten miles. It is a guide to the Inner Harbor, and its geographical position is

Latitude ..... **42° 31′ 36″ N.**
Longitude ..... **70° 51′ 56″ W.**

Inner Harbor of Salem. The Inner Harbor, or Salem Harbor proper, is a large cove contained between Marblehead Peninsula on the east and Salem Neck and the neck of land to the southward of it (on which the city is built) on the west. Within these limits the direction of the harbor is **NE.** by **N.** and **SW.** by **S.**, and it is a mile and a half long. The entrance is between Fort Point on the northwest and Naugus Head, the northwestern point of Marblehead Peninsula, on the southeast, and between these two points it is seven hundred yards wide; but the cove rapidly widens, after passing Naugus Head, to a width of nearly a mile. The deep-water channel is, however, quite narrow, and lies nearest to the eastern shore,—extensive flats making off from the western or town side. Into the southern end of this harbor flows a small shallow stream, called **Forest River.** A dam is built across its mouth and extensive mills, known as **Forest River Mills**, are erected upon it.

The town of **Salem** is separated from **South Salem** by a shallow stream, fifty yards wide between the wharf-lines of the two towns, but which widens into a broad lagoon, separating the South Salem peninsula from the mainland. Across the mouth of this stream stretches a very long wharf, (covered with warehouses,) which runs about **SE.**, is nearly six hundred yards long, and is called **Derby Wharf.** On the southeastern end of this wharf is built a light-house, seventeen feet high, and painted red, showing a fixed red light, of the sixth order of Fresnel, from a height of twenty-two feet above sea-level, visible nine miles. This, with Fort Pickering Light-house, forms the Inner Harbor range. About one hundred and seventy-five yards to the southward of it is a long low point, with a number of buildings on it, called **Long Point.**

Derby Wharf Light-house.

A quarter of a mile to the southward of Long Point is **Palmer's Point**, and the cove between them is called **Palmer's Cove.** Palmer's Point is twenty feet high, its summit covered with houses and ornamental trees, and slopes gently to the water. Three-eighths of a mile (seven hundred and fifty yards) to the southward of it is Pickering's Point, forty feet high, with a steep slope towards the water. It is the western point of the mouth of Forest River, and the shores are here all cultivated,—the land sloping easily to the water's edge. The crest of the rising ground is covered with low trees and many handsome houses. At Pickering's Point the mouth of Forest River is nearly six hundred, but at the mill-dam it is only about one hundred yards wide.

Pickering's Point.

Jeggies' Island. A small rocky island, called Jeggles' Island, lies off the western shore of the harbor, a quarter of a mile **SW.** from Pickering's Point. Abreast of this island, and a hundred and fifty yards from it, are two small bare rocks,—the channel to the Mills passing between them and Jeggles' Island.

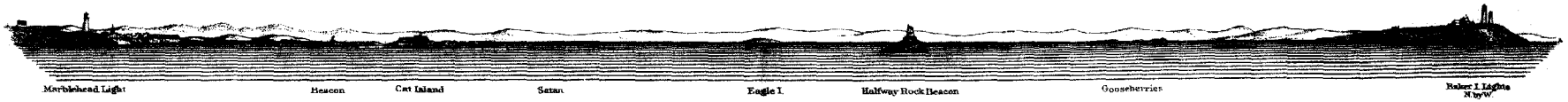
The eastern shore of the Inner Harbor is formed, as before mentioned, by Marblehead Peninsula, which is a mile and three-quarters long and a little over a mile wide. It lies **NE.** and **SW.**, its surface is undulating and all available land cultivated. On the Salem side it is hilly; in some places (as near Forest River Mills) it is thickly covered with spruce and fir; in others (as abreast of Pickering's Point) dotted here and there with stunted spruce and fir; and in others the hills are high, regular in outline and perfectly smooth and bare. Near the northwestern end of the peninsula the surface is undulating, gently sloping on the western side towards Salem Harbor, and dotted with clumps of fine forest trees. The eastern shore of this peninsula is occupied by the town of **Marblehead.**

Marblehead Peninsula.

Naugus Head, the northwestern point of Marblehead Peninsula, is also the southeastern point of the entrance to the Inner Harbor. It is bare of trees and slopes precipitously towards the water, and a large earth-work occupies its western side.



Entrance to Salem by Main Channel, Baker Island Lights bearing W. ¼ N. distant 1 Mile



Entrance to Salem by Cat Island Channel, Marblehead Light bearing N.W.by W.½W. distant 3¼ Miles

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DANGERS

IN APPROACHING AND ENTERING SALEM HARBOR BY THE MAIN SHIP CHANNEL.

In coming in for Salem Entrance from the northeastward the first danger met with is on the northern side of the passage, just after passing Great Egg Rock, and is called Gale's Ledge, (already described on page 543,) which has two feet at low spring tides. From Baker's Island Light-houses it bears **NE.** by **E.** ¼ **E.**, a mile and a quarter distant; and a red spar-buoy (No. 2) is placed in three and a half fathoms to the southward of it. This ledge is an obstruction common to Salem and Manchester harbors. ***Gale's Ledge.***

A quarter of a mile to the westward of Gale's Ledge lies *Pilgrim Ledge*, which has nineteen feet at low water, and bears from Baker's Island Light-houses **NE.** ¾ **E.**, a little over one mile distant. It may be easily avoided by not going to the northward of the buoy on Gale's Ledge bearing **E.**

After passing Gale's and Pilgrim ledges there will be seen on the starboard bow, off the entrance to Manchester Harbor, an iron spindle with cage on top. This is on The Whale's Back, which is dry at three-quarters ebb, and lies directly in the mouth of Manchester Harbor and on the northern side of the main entrance to Salem. From House Island it bears **S SW.**, a quarter of a mile, and from Great Misery **E.** by **S.**, three-eighths of a mile. The spindle, which is painted red, is placed on the eastern point of the ledge. ***The Whale's Back.***

From the northern end of Baker's Island a bar of rocks, sand and pebbles extends to the northward and northwestward two hundred yards. It is known as Baker's Island Shoal, and is marked by a black spar-buoy (No. 5) placed in sixteen feet off the northern end of the shoal. The course in for Hospital Point Light-house leads within a hundred and fifty yards of this buoy. ***Baker's Island Shoal.***

Powers' Rock is on the northeastern point of Baker's Island Shoal, and its existence was not known until the summer of 1869, when Captain Powers, the custom-house pilot, while sounding to the northward of Baker's Island struck shoal water and made a cursory examination of it. Not being able to examine the rock thoroughly, he left it for a more favorable opportunity; but, in the meantime, a three-masted schooner struck upon it. This rock has nine feet at ordinary low water, lies **NW.** by **N.** ½ **N.** from the eastern light-house, and is about one hundred yards from low-water mark. The buoy on Baker's Island Shoal has been recommended to be moved to the northward so as to enable vessels to clear this rock. ***Powers' Rock.***

After passing Powers' Rock the next danger met with is also on the southern side of the channel, and is called Hardy's Rock Shoal, which has two feet at low water, and extends off from *Hardy's Rocks* (which are dry at half-tide) in a **NE.** direction nearly two hundred yards. A black spar-buoy (No. 7) is placed off its northeastern end in three fathoms, and bears **W.** by **N.** ½ **N.** from Baker's Island Light-houses, half a mile distant, and **S.** by **W.** from Little Misery, a third of a mile distant. To the southwestward of it will be seen a spindle composed of a spar with two triangles on top,—all being painted black. This beacon, which is on the half-tide rocks, is called **Hardy's Rock Beacon**, and bears **W.** by **N.** from Baker's Island Light-houses, five-eighths of a mile distant, and **S SW.** from Little Misery, three-eighths of a mile distant. ***Hardy's Rock Shoal.***

A little to the westward of Hardy's Rock Beacon will be seen another black spar-buoy, which is on Rising States Ledge,—the western end of the mass of shoal ground surrounding Hardy's Rocks. It has ten feet at mean low water and eight at low springs, and bears **W.** by **N.** from Hardy's Rock Beacon, a little over two hundred yards distant. The buoy (No. 9) is placed in four fathoms off the northwestern point of this ledge, which is not in the way except for vessels intending to pass to the southward of House and Bowditch's ledges. ***Rising States Ledge.***

When up with the black buoy (No. 7) on Hardy's Rock Shoal, a spar-buoy, painted red and black in horizontal stripes, will be seen on the southern side of the channel. This is on House Ledge, which lies near the middle of the channel and has eight feet at lowest tides. It is a small detached rock, with deep water on all sides of it, and the buoy may be passed on either hand by giving it a berth. House Ledge bears **NW.** by **N.** ½ **N.** from Hardy's Rock Beacon, nearly four hundred yards distant, and **SW.** ¼ **W.** from the western end of Little Misery, nearly six hundred yards (one-third of a mile) distant. Rising States Ledge is nearly four hundred yards **SW.** by **S.** from this ledge. ***House Ledge.***

After passing House Ledge, (still steering for Hospital Point Light-house,) three spar-buoys, painted red and black in horizontal stripes, will be seen on the northern side of the channel, and a granite beacon on the southern side of the channel. The beacon, which is on Bowditch's Ledge, is called **Bowditch's Ledge Beacon**, and is a conical structure of granite with a wooden staff and cage on top painted black. It is built upon the dry part of the shoal, bears **W NW.** from Baker's Island Light-houses a mile and an eighth distant, and lies nearly in the middle of the channel. The course for Hospital Point Light-house passes nearly two hundred yards **N.** of this beacon. ***Bowditch's Ledge.***

On the northern side of the channel, after passing Little Misery, the first danger met with, which is opposite to Bowditch's Ledge, is called Misery Ledge, and is marked by a spar-buoy with red and black horizontal stripes. It is a detached rock, with eight feet at lowest tides and four fathoms water all around it. It lies W. by N. from Little Misery, over half a mile distant, and the channel passes midway between it and Bowditch's Ledge Beacon.

Misery Ledge.

An eighth of a mile W. by N. from Misery Ledge is another spar-buoy with horizontal stripes. This is on John's Ledge, (sometimes called *West End of Great Misery*,) a small detached rock, with eight feet at lowest tides and four fathoms water all around it. The buoy is placed on the southern point of the rock in three fathoms and a half water, and the Main Ship Channel courses lead to the southward of it; but vessels using the inner channel, between Great Misery and the mainland, pass to the northward of it.

John's Ledge.

One-eighth of a mile N. from Misery Ledge, and about two hundred and fifty yards NE. by E. from John's Ledge, will be seen a third spar-buoy, also painted red and black in horizontal stripes, and placed on the southern point of Misery Shoal,—a ledge two hundred yards long, lying NW. and SE., with seven feet at mean low water on its shoalest part just to the northward of the buoy, and from three to four fathoms water on all sides of it. When up with Bowditch's Ledge Beacon, the three spar-buoys on Misery Ledge, John's Ledge and Misery Shoal will appear on the northern side of the channel in the form of a triangle.

Misery Shoal.

A red spar will be seen to the eastward of the buoy on Misery Shoal, lying off the western point of Great Misery Island. This is on Misery Rock, which has six feet at mean low water, lies off the western shore of Great Misery Island at a distance of three hundred yards, and forms the western end of a long shoal or bar called *Misery Bar*, which extends to the westward from the island. The buoy, which is marked No. 10, is placed in fifteen feet off the southwestern side of the rock as a guide to vessels bound through the passage between Great Misery and West Beach.

Misery Rock.

After passing between John's Ledge and Bowditch's Ledge Beacon there are no obstructions in the channel and no dangers, except that on the northern side of the channel, off Allen's Head, there is a detached rock with seven feet at lowest tides, called John's Rock. It lies nearly three hundred and fifty yards S. from Allen's Head, is not buoyed, and is not in the way of vessels unless they are standing to the northward on a wind. There is a narrow passage between the rock and the shore, but it is not safe.

John's Rock.

Off the northern end of Marblehead Peninsula lie a great number of ledges, bare and sunken rocks and shoals, obstructing alike all the channels into the Inner Harbor of Salem. Of these the most northerly is The Haste, which consists of a rocky islet surrounded by ledges called The Great Haste; a small rock, bare at low water, lying to the northward of the Great Haste, called The Little Haste; and a sunken rock, with eight feet water, lying to the eastward of The Great Haste, called Haste Rock.

The Haste.

A vessel bound in by the Main Ship Channel will not approach The Haste unless the wind is ahead and she is standing towards the southern side of the channel. In this case care must be taken to avoid, first, Haste Rock, which forms the eastern end of The Haste shoals, has eight feet at mean low water, and lies at the junction of the Main with the Cat Island Channel. It is a third of a mile N. from Coney Island (see description of Cat Island Channel) and an eighth of a mile SE. by E. ½ E. from The Great Haste. A black spar-buoy (No. 7) is placed in three fathoms on the eastern side of the rock, as a guide to vessels bound in by the Cat Island Channel.

Haste Rock.

The Great Haste, which is a bare rocky islet about one hundred yards long and surrounded by shoal water, lies a mile and a quarter NE. by E. from Naugus Head, the eastern point of entrance to the Inner Harbor. It bears from Bowditch's Ledge Beacon W. ⅛ S. one mile and three-eighths; and from Fort Pickering Light-house E. by N. one and one-quarter miles distant. In passing The Great Haste give it a berth to the southward of a quarter of a mile, unless perfectly familiar with the extent and direction of the shoals which make off from it to the northward. There is no passage to the southward of it.

The Great Haste.

When nearing The Great Haste a large spar with a cask on top will be seen to the northward of it. This is on The Little Haste, a ledge, bare at two-thirds ebb, lying one hundred yards NW. ¾ N. from The Great Haste. The spar, which is on the middle of the rock, is painted black, and must receive a good berth to the southward from all but very light-draught vessels.

The Little Haste.

Still farther to the northwestward of The Great Haste extends Haste Shoal in a N NW. and S SE. direction, and from the beacon on The Little Haste an eighth of a mile. A black spar-buoy (No. 13) is placed in sixteen feet on the northern point of this shoal; but vessels of light draught may, however, pass between the buoy and the beacon. Haste Shoal marks the turning point in the Main Ship Channel and the boundary between Inner and Outer harbors; and here the channel takes a sharp turn to the southwestward and vessels make a straight course for the town.

Haste Shoal.

The channel now leads between Salem Neck on the west and the dry ledges and flats which make off from Naugus Head to the northeastward; and a granite monument will be seen on the western side of the channel and a black spar-buoy on the eastern side. This buoy is on The Middle Ground, a long flat which makes to the southwestward from The Great Haste a distance of three-quarters of a mile. It is in several places awash at low water, and there are many spots with four and five feet at lowest tides. The buoy (No. 15) is placed in twelve feet on the western edge of the flat, bears **SW.** by **W.** $\frac{3}{4}$ **W.** from Haste Shoal buoy, and is five-eighths of a mile from it. It may be left to the eastward and approached quite closely; but the sailing-lines give it a good berth.

The Middle Ground.

The granite beacon which is seen on the western side of the channel, off the northern end of Winter Island, is on Abbott's Rock, and is called **Abbott's Monument.** The ledge lies **W.** $\frac{3}{4}$ **N.** from The Middle Ground, three hundred yards from the northern end of Winter Island, and is dry at low water. The beacon is built on the summit of the rock, and is a square granite monument, surmounted by a wooden staff with an open-work cage on top,—the staff and cage being painted red. Vessels approaching this rock at night will find it almost impossible to see the monument, as it is low and shows against the land; but the erection of the lights on Fort Point and Derby Wharf enables vessels to avoid this danger. So long as Derby Wharf Light-house is kept open to the eastward of Fort Pickering Light-house this ledge cannot be struck; and the range of the two lights will carry you safely past The Haste and up to The Middle Ground buoy.

Abbott's Rock.

After passing Abbott's Monument another granite beacon will be seen on the eastern side of the channel, and a red spar-buoy a little to the westward of it. The beacon is on Great Aqua Vitæ Ledge, a mass of rocks, dry at half-tide, which lie on the southwestern end of The Middle Ground. The monument is a pyramidal granite structure surmounted by a wooden staff and cage,—the latter painted black. This monument marks the point of junction of the South and Main Ship channels, and is to be left to the eastward by vessels using the latter and to the northward by those bound in or out by the former. The monument on Great Aqua Vitæ Ledge bears from

Great Aqua Vitæ Ledge.

	Mile.
Fort Pickering Light-house, E. by S. $\frac{1}{4}$ **S.**——a little over	$\frac{1}{2}$
Naugus Head, NE. $\frac{1}{8}$ **E.**	$\frac{1}{3}$
The Great Haste, SW. by W. $\frac{3}{4}$ **W.**	$\frac{1}{8}$

The red spar-buoy is on Knapp's Rock, which is in the South Channel, and has eight feet at low water. It obstructs both channels, lies nearly **W.** from the monument on Great Aqua Vitæ Ledge, nearly two hundred yards off, and is exactly abreast of Fort Pickering Light-house. The buoy (No. 10) is placed in seven feet water on the southern side of the rock.

Knapp's Rock.

Passing Fort Pickering Light-house, there will be seen a red spar-buoy on the western side of the channel. This is on Half-Tide Rock, which lies off the southern end of Winter Island, one hundred and fifty yards from it, and is awash at low water and bare at extreme low tides. The buoy is marked No. 12, and placed in twelve feet water off the southern end of the ledge.

Half-Tide Rock.

In the upper part of the Inner Harbor the flats make off a long distance from shore, but the approach is gradual, and the lead will be the best guide.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING SALEM HARBOR BY THE MAIN SHIP CHANNEL.

I. ***Coming from the Northward and Northeastward, outside of everything.***—When abreast of Eastern Point, with the light-house bearing **N.** $\frac{1}{2}$ **W.**, three-quarters of a mile distant, and you are in twenty fathoms water, steer **W.** by **S.** $\frac{1}{2}$ **S.** until Baker's Island Light-houses bear **W.** by **N.**; when steer for them, carrying not less than fifteen fathoms water, until you are within a mile and an eighth, with fourteen fathoms, hard bottom, and Hospital Point Light-house bears **W.** by **N.** $\frac{1}{4}$ **N.** Now steer that course for the light, which will carry you safely up the middle of the channel in not less than five and a half fathoms water. *At night,* continue this course, with not less than five and a half fathoms, until Fort Pickering Light-house and Derby Wharf Light-house are in range on a bearing of **SW.** by **W.** $\frac{3}{4}$ **W.**, when there will be five and a half fathoms. Steer that course, keeping the range, and carrying not less than four and a half fathoms, until Hospital Point Light-house bears **N.** $\frac{1}{4}$ **E.** Then steer **SW.** $\frac{1}{4}$ **W.** into the harbor, carrying four and a half fathoms, and anchor, when Derby Wharf Light-house bears **W.**, in three and a half fathoms, soft bottom.

In the day-time, when abreast of Bowditch's Ledge Beacon, with seven fathoms, steer **W.** by **N.** about for the southern part of Beverly, and continue this course, carrying six fathoms, until the two

Sailing Directions---Salem Harbor.

lights are in range as before; when steer for them, (keeping the range,) and follow the directions given above.

These courses pass three-quarters of a mile to the southward of Gale's and Pilgrim ledges; half a mile to the southward of The Whale's Back; a hundred and fifty yards to the northward of Powers' Rock; a quarter of a mile to the northward of Hardy's Rock Beacon; nearly two hundred yards to the northward of House Ledge; an eighth of a mile to the southward of Misery Ledge; the same distance to the northward of Bowditch's Ledge Beacon; a quarter of a mile to the westward of the beacon on The Little Haste; nearly two hundred yards to the westward of Haste Shoal buoy; a hundred and fifty yards to the westward of The Middle Ground buoy; an eighth of a mile to the eastward of Abbott's Monument; about three hundred and fifty yards to the westward of the beacon on Great Aqua Vitæ Ledge; an eighth of a mile to the westward of Knapp's Rock; and the same distance to the eastward of Half-Tide Rock.

II. ***Coming from the Northward, alongshore.***—Coming from Gloucester bound to Salem, when Eastern Point Light-house bears **E.**, steer **W.** by **S.** ½ **S.** for Baker's Island Light-houses, carrying not less than eight fathoms. Continue this course until you are within a quarter of a mile of the lights, with eight and a half fathoms, rocky bottom, and Hospital Point Light-house bears **W.** by **N.** ¾ **N.**; when steer that course, carrying not less than seven fathoms water, and follow the directions given above. On this course you will pass three-eighths of a mile to the eastward of Great Egg Rock; three-quarters of a mile to the eastward of Salt Rock; a quarter of a mile to the southward of Gale's Ledge; three-eighths of a mile to the southward of Pilgrim Ledge; and half a mile to the southward of The Whale's Back.

III. ***Coming from the Eastward or from sea.***—Bring Eastern Point Light-house to bear **NE.** by **E.** ½ **E.** and Baker's Island Light-houses **W.** by **N.** ¼ **N.**, with about sixteen fathoms water, and steer **W.** by **N.** ¾ **N.** for Hospital Point Light-house, carrying not less than seven fathoms.

IV. ***Coming from the Southward.***—When Egg Rock Light-house bears **W.** ½ **N.**, three miles distant, and Baker's Island Light-houses **NE.** by **N.** ½ **N.**, six miles and a quarter distant, there will be twenty fathoms. Bring Eastern Point Light-house to bear **NE.** ½ **E.** and steer for it until Baker's Island Light-houses bear **W.** by **N.** ½ **N.** and Hospital Point Light-house **W.** by **N.** ¾ **N.** There will then be twenty-two fathoms, fine grey sand. Now steer for Hospital Point, and proceed as directed for this channel.

Or, on the course for Eastern Point Light-house, you will pass about three-quarters of a mile to the eastward of Half-Way Rock, and, after passing it, as soon as the low light on Baker's Island is opened to the northward of the high light, you may steer **N.** until the lights bear **W.** by **N.** ½ **N.**, as before; but be careful not to shut the low light in behind the high one, as there is danger of being set ashore on the Outer or Middle Breakers. So long as the low light is kept thus open all danger is cleared; but a stranger, however, had better keep his distance, and steer for Eastern Point Light-house until he gets on the bearing of Hospital Point Light-house. This is safe and reliable, leading clear of the Outer Breakers and leaving them an eighth of a mile to the westward.

Vessels coming from the Southward seldom use the Main Ship Channel, as the others, though not so plain, are equally good passages into the harbor. Since the erection of Hospital Point and Fort Pickering light-houses the Cat Island Channel can be as easily and safely entered by night as by day, and strangers need not fear to follow the directions.

Vessels beating up for the Main Ship Channel must not, when to the northward of Half-Way Rock, stand to the southward and westward so as to bring Baker's Island Light-houses in range, to avoid the Middle and Outer Breakers. Nor must they stand to the northward farther than to bring Baker's Island Light-houses to bear **W.** by **S.**, to avoid Gale's Ledge.

On the above courses, to enter Manchester Harbor, or the anchorage between the mainland and Great Misery and House Islands.—On the course in, steer **W.** by **N.** ¾ **N.** for Hospital Point Light-house until Baker's Island Light-houses bear **SE.** by **S.** ½ **S.** and you are in eight fathoms, hard bottom, when steer **N.** by **E.** ½ **E.** one mile, or until Ram Island bears **E.**, when anchor in from three to four fathoms, hard sand. This course passes an eighth of a mile to the westward of The Whale's Back; the same distance to the eastward of Great Misery Island; two hundred yards to the westward of White's Ledge; and a little over one hundred and fifty yards to the eastward of Sauli's Rock.

On the above courses, to enter Beverly Harbor.—When between Bowditch's Ledge Beacon and Misery Ledge buoy, with seven and a half fathoms, and Hospital Point Light-house bears **W.** by **N.** ¾ **N.**, steer **W.** ¼ **N.** for the northeastern end of Salem Neck, carrying not less than four and a half fathoms. Continue this course until Fort Pickering Light-house bears **SW.** and Hospital Point Light-house **N.** by **E.**, when there will be five and a half fathoms. Then steer **NW.** by **W.**, with nothing less than seventeen feet, until Fort Pickering Light-house is shut well in behind Juniper Point and that point is in range with the fort on Naugus Head. Then anchor in three and a half fathoms and wait for a pilot.

The dangers in Beverly Harbor, and detailed sailing directions for entering, will be given, so far as is possible, under the head of Beverly Harbor.

CAT ISLAND CHANNEL.

This channel, which has a general course about **NW.** and **SE.**, leads between Baker's Island on the north and Lowell's or Cat Island on the south, and is wide and deep but obstructed by many ledges and rocks. On the northern side of the entrance are two small, bare, rocky islets, called The Gooseberries, lying **N.** and **S.** from each other, a quarter of a mile apart, and from six hundred yards to half a mile from the southern end of Baker's Island. They are surrounded by dry and sunken ledges, (some of which are among the most dangerous in the approaches to Salem Harbor,) and are named, respectively, **The North Gooseberry** and **The South Gooseberry.**

The Gooseberries.

A little over a mile **W.** from The South Gooseberry is Lowell's Island, formerly known as Cat Island, but since the erection of the Lowell House commonly called Lowell's Island. It is low and bare, lies **N NW.** and **S SE.**, and is nearly half a mile long. The only noticeable features are the hotel near its southern end and the beacon, formed by a spar with a cask on top, which is erected on the rocks at the extreme southern point of the island. This island separates the entrance to the Cat Island Channel from the entrance to the Western or Marblehead Channel.

Lowell's or Cat Island.

Three-quarters of a mile **N.** by **E.** ¼ **E.** from Cat Island (Lowell House cupola) lies a small bare island, called Eagle Island, extending **NE.** and **SW.**, and nearly two hundred yards long. It is a mile and three-eighths **W.** by **S.** ¼ **S.** from Baker's Island Light-houses, and surrounded by dangerous shoals, but they are all marked by buoys.

Eagle Island.

After passing Eagle Island, Coney Island is reached, on the western side of the channel. It is a low barren islet of irregular shape, surrounded by bare ledges and sunken rocks. From Fort Pickering Light-house it bears **E.** ¼ **S.**, a mile and a quarter distant; from Eagle Island **W NW.**, one mile; and from the Lowell House cupola **NW.**, a mile and a half.

Coney Island.

The Cat Island Channel joins the Main Ship Channel at The Great Haste.

DANGERS

IN APPROACHING AND ENTERING SALEM HARBOR BY THE CAT ISLAND CHANNEL.

There are many ledges and shoals between Baker's Island and Cat Island, which will be in the way of a vessel standing to the northward on a wind; and three-eighths of a mile to the eastward of Baker's Island (southern end) is Searle's Rock, which has six feet at lowest tides. It is a detached rock which has good water all around it, lies a little over half a mile **SE.** from Baker's Island Light-houses, and is marked by a black spar-buoy (No. 3) placed in sixteen feet on the northeastern side of the rock. Vessels bound in by the Main Ship Channel leave this buoy a long way to the southward, and take no account of it unless they are standing inshore on a wind.

Searle's Rock.

From The Gooseberries great shoals, with many bare ledges, extend to the eastward and southeastward and form dangerous obstructions to the Cat Island Channel. The eastern extremity of this mass of shoal ground is dry at low water, and is one mile **E.** by **S.** from The South Gooseberry and one mile **S SE.** from Baker's Island Light-houses. It is known as The Inner Breakers, is a most dangerous ledge, and is not buoyed. Eight feet at mean low water may be taken across the shoal ground between The Inner Breakers and The Gooseberries on a **N.** by **W.** course for Baker's Island Light-houses, but the fishermen living in the vicinity are the only ones who use this passage.

The Inner Breakers.

Three-eighths of a mile **SE.** from The Inner Breakers, and a mile and three-eighths **SE.** by **S.** from Baker's Island Light-houses, lies another bad ledge, known as The Middle Breakers. It is a detached rock about two hundred yards in extent, lies **E.** and **W.**, and there are dry spots upon it at low tides. A black spar-buoy (No. 1) is placed in four fathoms on the eastern side of the ledge.

The Middle Breakers.

There is from four to five fathoms water between Middle Breakers and Inner Breakers, but strangers must not attempt the passage.

Five hundred yards S. from The Middle Breakers, and a mile and three-quarters SE. by S. ¼ S. from Baker's Island Light-houses, lie two ledges close together, called The Outer Breakers or *South-east Breakers*. The northern ledge lies NE. and SW., and has four feet at mean low water; the other lies nearly N. and S., and has nine feet. They are the first obstructions met with by a vessel bound in from the southward or eastward with a fair wind by this channel; and are marked by a red spar-buoy (No. 2) placed in five and a half fathoms on the eastern side of the ledge. Coming in towards Half-Way Rock from the eastward this buoy will be seen well to the northward.

The Outer Breakers.

There is deep water between Middle Breakers and Outer Breakers, and those well acquainted with the dangers sometimes use it; but strangers should never attempt it.

After passing The Outer Breakers the course in leads almost exactly for Half-Way Rock, which lies off the middle of the entrance, and is only dangerous on very dark nights or in thick fogs, as it is thirty feet above sea-level and bold-to on all sides. On its summit there was formerly a monument, but this has disappeared, leaving only the foundation, which shows from a distance as a white spot on top of the rock. It is the intention of the Light-House Board to rebuild this monument, which, when completed, will show as a granite beacon, surmounted by three spindles meeting at the top, and these again surmounted by a keg-shaped cage,—the whole being painted red. It was formerly the custom among the Marblehead fishermen, bound out on a fishing cruise, to run alongside of Half-Way Rock and throw "luck pennies," as they called them, upon it, wishing for a good fare. Half-Way Rock bears from

Half-Way Rock.

	Miles.
Baker's Island Light-houses, S. ¼ E. ---------- a little over	2
Marblehead Light-house, E. by S. ½ S. ----------	2 ⅝
The South Gooseberry, S SE. ----------	1 ⅜

When up with Half-Way Rock a mass of breakers and dry ledges will be seen to the northward in range with Baker's Island, which are the shoals to the southeastward of The Gooseberries, and are known as The Dry Breakers. They are not in the way except for vessels beating to windward, or those that attempt the passage between Inner and Middle Breakers. They form the southern extremity of the mass of shoal ground extending to the eastward and southeastward from The Gooseberries, and are dry at high water. They lie about a third of a mile (six hundred yards) SE. by E. ¼ E. from The South Gooseberry and five-eighths of a mile (eleven hundred yards) S. from the southern point of Baker's Island, and are not buoyed, as they always show themselves.

The Dry Breakers.

After passing Half-Way Rock the channel leads to the northwestward, and a spar-buoy painted red and black in horizontal stripes will be seen on the northern side of the channel and a red spindle on the southern side. The buoy is on Gooseberry Ledge, which has fourteen feet at mean low water, and bears NW. ¾ N. from Half-Way Rock, a little over a mile distant, and S SW. from The South Gooseberry, three-eighths of a mile distant. It is a small detached ledge with from four to five fathoms water all around it; and the buoy is placed in three and a half fathoms on the southern side of the rock.

Gooseberry Ledge.

The red spindle which appears to the southward is on Satan Rock, a bare ledge lying nearly in the middle of the channel, and bearing NW. by W. from Half-Way Rock, a mile and a quarter distant, and SW. by W. ¼ W. from Gooseberry Ledge, nearly half a mile distant. The spindle is an iron shaft thirty feet high, painted red, with a round cage on top painted black, and is placed on top of the rock. It may be passed on either hand, but should receive a good berth if you pass to the northward of it.

Satan Rock.

After passing between Gooseberry Ledge and Satan Rock, two black spar-buoys will be seen to the northwestward. The nearest, which will appear on the western side of the channel and off the eastern shore of Cat Island, is on Martin's Rock, a sunken ledge, with twelve feet at mean low water, lying a quarter of a mile from the Cat Island shore, and bearing from Satan Rock NW. ¼ W., five-eighths of a mile, and from the Lowell House NE. by N. ½ N., a quarter of a mile. The buoy is marked No. 1, and is placed in three and a half fathoms on the eastern side of the rock. There is from three to four fathoms water inshore of it, but vessels must not attempt the passage.

Martin's Rock.

The black spar-buoy on the starboard bow is on The Brimbles, and does not properly belong to this channel, as it is intended to mark the passage into Marblehead between The Gooseberries and Eagle Island. The number of buoys which appear, and their color, is, however, apt to confuse a stranger coming in by the Cat Island Channel, and it is deemed best to mention each one as it is passed. The Brimbles is a dangerous ledge, awash at low water, which lies about midway between The North Gooseberry and Cat Island. It bears W. by S. ¼ S. from the former, nearly three-quarters of a mile distant, and from the Lowell House cupola NE. ¾ N., a little over half a mile; and from Baker's Island Light-houses it bears SW. by W. ¼ W., one mile and three-eighths distant. The shoal is about two hundred yards in extent, and the buoy, which is marked No. 3, is placed in three and a half fathoms off its northwestern side. Vessels using the Cat Island Channel leave this buoy nearly six hundred yards to the eastward.

The Brimbles.

When past Martin's Rock, the channel leads between a red spar-buoy on the eastern side and a buoy painted red and black in horizontal stripes on the western side of the channel.

Mid-channel Rock.

The red buoy is on Mid-channel Rock, a sunken rock, with sixteen feet at mean low water, which bears **N.** ¼ **W.** from the Lowell House cupola, eleven hundred yards distant, and **W.** by **S.** ¾ **S.** from Eagle Island, distant three hundred and fifty yards. The buoy is placed in three and a half fathoms on the western side of the rock, is numbered 4, and is to be left to the eastward.

Chappel's Ledge.

The buoy with horizontal stripes is on Chappel's Ledge, on the western side of the channel, which has fifteen feet at mean low water. It bears **NW.** ¾ **N.** from the Lowell House cupola, eleven hundred yards distant, and the same distance **E.** ½ **S.** from Peach's Point, (the northeastern point of Marblehead Peninsula.) The buoy is in four fathoms on the eastern side of the rock, and is left to the westward.

Eagle Island Bar.

After having passed between Mid-channel Rock and Chappel's Ledge a red spar-buoy will be seen on the eastern side of the channel. This is on the northwestern end of Eagle Island Bar, a long shoal making out in a northerly direction from Eagle Island a third of a mile, with one foot at mean low water and dry at low spring tides. The buoy (No. 6) is placed in three fathoms off its northwestern end, and bears from Peach's Point **NE.** by **E.** ¾ **E.**, distant a mile and a quarter, and from Baker's Island Light-houses **W.** by **S.** ¼ **S.**, a mile and a half distant.

Coney Island Ledge.

On the western side of the channel, as you approach Coney Island, a black spar-buoy will be seen. This is on Coney Island Ledge, a very extensive mass of rocks,—a number of which are out at low water, and others with from one to ten feet upon them,—lying off Coney Island, between the bearings of **SE.** ¼ **S.** and **SW.** by **S.** ¾ **S.** From the bare rocks Fort Pickering Light-house and Great and Little Aqua Vitæ beacons are in range. The other shoals lie between **SE.** by **S.** and **SW.** by **S.** from the island, extending a third of a mile off. The buoy is marked No. 3, and is placed in three fathoms off the northeastern point of the dry ledge.

Coney Island Rock.

When up with the buoy on Coney Island Ledge another black buoy will be seen ahead. This is on Coney Island Rock, a sunken ledge, with thirteen feet at mean low water and from three to five fathoms water all around it. It lies on the western side of the channel, a quarter of a mile **NW.** by **N.** from Coney Island Ledge buoy, and the same distance **NE.** by **E.** from Coney Island. The buoy is marked No. 5, and is placed in three fathoms on the eastern side of the rock.

Haste Rock.

When up with Coney Island Rock the course leads into the Main Ship Channel, and The Great Haste and the beacon on The Little Haste will be seen to the westward, while a black spar-buoy will be seen a quarter of a mile ahead. This is on Haste Rock, which forms the eastern end of *The Haste*, and has eight feet at mean low water. It is a third of a mile **N.** from Coney Island and an eighth of a mile **SE.** by **E.** ½ **E.** from The Great Haste. The buoy (No. 7) is placed in three fathoms on its eastern side.

The Great Haste.

Passing Haste Rock, the Cat Island Channel joins the Main Ship Channel, and The Great Haste is first passed,—a bare rocky islet, surrounded by shoals, a mile and a quarter **NE.** by **E.** from Naugus Head and the same distance **E.** by **N.** from Fort Pickering Light-house. It should receive a berth of a quarter of a mile to the westward and southward. One hundred yards to the northward of The Great Haste will be seen a large spar with a cask on top. This is the beacon on *The Little Haste*, which is bare at two-thirds ebb. The beacon is on the middle of the dry part, is painted black, and must receive a good berth to the westward.

Haste Shoal.

Still farther to the northward will be seen a black spar-buoy. This is on Haste Shoal, and marks the turning point in the channel where it turns to the southwestward, leading into the Inner Harbor. Haste Shoal lies **N NW.** and **S SE.**, and extends from The Little Haste beacon an eighth of a mile. The buoy is marked No. 13 and is placed in sixteen feet on the northwestern end of the shoal. Vessels of light draught may pass between this buoy and Little Haste beacon.

The Middle Ground.

After rounding the buoy on Haste Shoal the course leads to the southwestward for Fort Pickering Light-house, and between a granite monument to the westward and a black spar-buoy to the eastward. The buoy is on the western point of The Middle Ground, a long flat, which extends **SW.** from The Great Haste three-quarters of a mile, and is awash at low water in several places. The buoy is marked No. 15, is placed in twelve feet, and may be approached quite closely.

Abbott's Rock.

The granite monument on the western side of the channel is on Abbott's Rock, which lies **W.** ¾ **N.** from The Middle Ground buoy and three hundred yards from the northern end of Winter Island, and is dry at low water. The beacon is built on the summit of the rock, and is a pyramidal granite monument surmounted by a wooden staff with an open-work cage on top,—staff and cage being painted red. (See page 549.)

After passing Abbott's Monument, another granite beacon will be seen on the eastern side of the channel and a red spar-buoy a little to the westward of it. The beacon is on Great Aqua Vitæ Ledge, dry at half-tide, which lies on the southwestern edge of The Middle Ground. The monument is a pyramidal granite structure, surmounted by a wooden staff and cage painted black. This monument marks the point of junction of the South and Main Ship channels, and is left to the northward by vessels using the former and to the eastward by those using the latter. The monument on Great Aqua Vitæ Ledge bears **E.** by **S.** ¼ **S.** from Fort Pickering Light-house, a little more than a third of a mile distant, and **W SW.** from The Great Haste, seven-eighths of a mile distant. The red spar-buoy near it is on *Knapp's Rock*, in the South Channel, (see page 549,) and must be left to the eastward by vessels using this channel. Vessels using the South Channel leave it to the northward.

Great Aqua Vitæ Ledge.

When nearly up with Fort Pickering Light-house there will be seen a red spar-buoy on the starboard bow. This is on Half-Tide Rock, which lies one hundred and fifty yards **S.** from the southern end of Winter Island, and is awash at low water and bare at extreme low tides. The buoy is marked No. 12, and placed in twelve feet off the southern end of the ledge.

Half-Tide Rock.

In the upper part of the Inner Harbor the flats make off a long distance from shore; but the approach is gradual, and the lead will be the best guide in seeking an anchorage.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING SALEM HARBOR BY CAT ISLAND CHANNEL.

Bring Baker's Island Light-houses to bear **NW.** ½ **N.**, two miles and a half distant, and Half-Way Rock **W.**, a mile and a half distant, when there will be twenty fathoms water. Now steer for the rock, and when up with it leave it on either hand, (having about seven fathoms water,) and steer **NW.** ½ **W.**, with nothing less than five and a half fathoms water, until you are between the red buoy on Mid-channel Rock and the red and black buoy on Chappel's Ledge. In *day-time* the southern end of Eagle Island will be in range with Baker's Island Light-houses on a bearing of **E.** by **N.** ⅜ **N.**; at *night* Hospital Point Light-house will bear **NW.** by **N.**, Fort Pickering Light-house **W NW.**, and Marblehead Light-house **SW.** ¼ **S.**; and the depth will be eight fathoms. Now steer **N.** by **W.** ⅜ **W.**, carrying not less than six and a half fathoms water, until Fort Pickering Light-house bears **W.** ½ **S.** and the eastern light on Baker's Island **E.** ⅜ **S.** The depth will be six fathoms, and you must steer **NW. Northerly** for Hospital Point Light-house, carrying not less than four and a half fathoms, until Fort Pickering Light-house and the light on Derby Wharf are in range on a bearing of **SW.** by **W.** ⅜ **W.**, with five fathoms water, soft bottom. Steer that course until Hospital Point Light-house bears **N.** ⅜ **E.**, with four and a half fathoms water, when steer **SW.** ⅜ **W.** into the harbor, and anchor at pleasure. *Or*, when between Mid-channel Rock and Chappel's Ledge, (as above,) steer **N.** by **W.** ⅜ **W.** until Fort Pickering Light-house and the light on Derby Wharf are in range; when steer for them and proceed as above directed.

The above courses pass nearly half a mile to the southward of The Outer Breakers; a quarter of a mile to the westward of Gooseberry Ledge; three hundred yards to the eastward of Satan Rock; an eighth of a mile (two hundred and fifty yards) to the eastward of Martin's Rock; a quarter of a mile to the westward of The Brimbles; three hundred yards to the westward of Mid-channel Rock; four hundred yards to the eastward of Chappel's Ledge; six hundred yards to the westward of Eagle Island Bar; four hundred yards to the eastward of Coney Island Ledge, Coney Island Rock and Haste Rock; and about a hundred and fifty yards to the northward of Haste Shoal.

WESTERN OR MARBLEHEAD CHANNEL.

This channel, the entrance to which lies between Lowell's or Cat Island on the east and Marblehead Neck on the west, is often used by vessels coming from the southward alongshore, and sometimes by those falling in with the entrance to the southward of Baker's Island. A good day-channel, which is sometimes called the **South Channel**, exists along the northern shore of Marblehead Peninsula among the numerous ledges lying off that shore; but it is narrow and not fit for strangers.

The Western Channel runs nearly **E.** and **S.**, leaving Cat Island to the eastward and Marblehead Neck to the westward; passes to the westward of Eagle Island and to the eastward of Coney Island; and joins the Cat Island Channel abreast of Haste Rock. It is much obstructed by ledges and shoals, which at night render this channel more unsafe than either of the others; but in the day-time, as the ledges in mid-channel can be seen and may be passed on either hand, it is a safe and good channel by which to enter.

Lowell's or Cat Island has already been described on page 551, and is easily recognizable by the hotel near its southern end. On the western side of the entrance is Marblehead Neck, which separates Marblehead Harbor from Massachusetts Bay. This peninsula is composed of bare hills and hillocks and is nearly an island,—its only connection with the mainland being by the narrow strip of beach, only fifty yards wide (at high water) and six hundred long, called **Marblehead Beach.** This beach commences about half a mile below the town of Marblehead and runs to the southwestern corner of the neck, thus forming the southern side of Marblehead Harbor. **Marblehead Neck.**

Marblehead Neck is half a mile wide at its southern end and gradually contracts towards its northern extremity, where it is not over an eighth of a mile in width. Here, on the extreme point, called **Marblehead Point,** is built Marblehead Light-house, a white tower, twenty-three feet high, showing a fixed white light, of the sixth order of Fresnel, from a height of forty-three feet above the sea. This light is visible eleven miles, and is in **Marblehead Light-house.**

Latitude.....42° 30′ 18′ N.
Longitude.....70° 50′ 2′ W.

A couple of rocky islets lie **SE.** by **E.** from the light-house, a quarter of a mile from shore, and at low water they are joined and go by the common name of Marblehead Rock. A beacon crowns the summit of the larger islet, and is built of granite, round and tapering at the top, and surmounted by a spar five feet long, painted black,—the body of the beacon being painted black and white in horizontal stripes. There is a good unobstructed passage between this rock and the neck through which five fathoms may be taken. **Marblehead Rock.**

The southern extremity of Marblehead Neck is called **Flying Point,** and is low and covered with short grass. Six hundred yards to the southeastward of it lies Tinker's Island,—in reality, two islands,—connected by a very narrow strip of sand, bare at low water They lie **N.** and **S.** from each other, are bare and rocky, and their eastern and southern shores are bold-to. There is no safe passage between Tinker's Island and Flying Point. **Tinker's Island.**

Marblehead Peninsula is that large projection of the mainland which separates the Inner Harbor of Salem from Marblehead Harbor. It extends **NE.** and **SW.,** and the town of **Marblehead** occupies its southeastern shores,—the surface being undulating and all available land cultivated. **Naugus Head** forms its northwestern point and also the southeastern point of entrance to the Inner Harbor of Salem. From Naugus Head the northern shores of the peninsula run about **E SE.** for one mile to **Peach's Point,** which is quite a prominent headland, (although of only moderate height,) and is bare of trees and somewhat undulating. The trend of the land from Peach's Point is **S. ¼ W.** for half a mile to **Fort Sewall,** built upon a rocky bluff which forms the western point of entrance to Marblehead Harbor. The fort is a regular work, and guards the Western Channel into Salem as well as Marblehead Entrance. **Marblehead Peninsula.**

The eastern shore of Marblehead Peninsula, between Peach's Point and Fort Sewall, is much cut up by coves. On the southern side of the point is **Dolliber's Cove,** shallow and of no importance. Orne's Island, bare, rocky, forty feet high, and lying **N.** and **S.,** separates Dolliber's Cove from **Little Harbor,** another small cove to the southward of it. A little over one hundred yards **S.** from Orne's Island is a low grassy islet, called **Gerry's Island,** and one hundred yards **S.** from this is Fort Sewall. **Orne's Island.**

After passing between Cat Island and Marblehead Neck the channel, continuing to the northward, leaves Eagle Island well to the eastward and a small bare rock, called **Gray's Rock,** to the westward, and passes along the eastern side of Coney Island and the shoals surrounding it; after which it joins the Main Ship Channel. (For description of the shores of that channel see pages 545–546.)

DANGERS

IN APPROACHING AND ENTERING SALEM HARBOR BY THE WESTERN OR MARBLEHEAD CHANNEL.

In approaching from the southward, alongshore, the first danger met with will be found on the course in for Marblehead Light-house, and is on the western side of the channel. It is called The Roaring Bull, and lies a little more than three hundred yards **SW.** by **S.** from Tinker's Island and **S. ¾ E.** from Flying Point, half a mile distant. It is awash at low water, and is marked by a red spar-buoy (No. 2) placed in four fathoms on its southeastern side. This buoy is painted red as a guide to Swampscott for vessels coming from the eastward; and it is not in the way of vessels bound into Salem or Marblehead unless they are beating in and standing to the westward. To avoid it they should not go to the westward of Marblehead Light-house bearing **N.** ***The Roaring Bull.***

Tom Moore's Rocks, the next danger met with, is also on the western side of the channel. It is a group of rocks, bare at one-third ebb, which lies off the eastern shore of Marblehead Neck, a little over half a mile to the northward of Tinker's Island and nearly three-quarters of a mile **S.** from Marblehead Light-house. The rocks are one-fifth of a mile (nearly four hundred yards) from the shore, and are marked by a black spar-buoy (No. 1) placed in three and a half fathoms on the eastern end of the ledge. This buoy is left well to the westward going in. ***Tom Moore's Rocks.***

After passing Tom Moore's Rocks there are no dangers until you are past Marblehead Rock; after which, in stretching to the westward on a wind, beware of Lasque's Ledge, sometimes, but incorrectly, called *Half-Tide Rocks*. This ledge is the rocky shoal which makes off in an

Lasque's Ledge. E. ½ N. direction from Marblehead Point three hundred and fifty yards. It eastern end bears NW. by N. ½ N. from Marblehead Rock beacon, four hundred yards distant, and has a black spar-buoy (No. 3) in three and a half fathoms upon it. This ledge can be crossed in sixteen feet close to the buoy, but no stranger should attempt it. The western half of Lasque's Ledge, which is dry at low water, is called *Half-Tide Rocks*, and extends from Marblehead Point to the eastward one hundred and sixty yards. The buoy is over a hundred and fifty yards to the eastward of Half-Tide Rocks.

Archer's Rock lies in the middle of the channel, five hundred yards to the westward of Cat Island, and has ten feet at low water upon it. There is four fathoms water all around

Archer's Rock. it, and it is marked by a spar-buoy, painted red and black in horizontal stripes, placed in three fathoms and a half on the southwestern side of the rock. This buoy is usually left to the eastward.

When past Archer's Rock, a black spar-buoy will be seen on the port bow about half a mile off. This is on Selman's Berth, a sunken ledge, with six feet at mean low water, which lies

Selman's Berth. five-eighths of a mile N. ½ E. from Marblehead Light-house and the same distance NW. from Archer's Rock buoy. It obstructs the entrance to the South Channel, but is not in the way of vessels using the Western Channel unless they are standing to the westward on a wind, when, to avoid it, they must go about as soon as Marblehead Light-house bears S. by W. ½ W. The buoy (No. 1) is placed in three and a half fathoms on the eastern point of this ledge as a guide to the South Channel.

When abreast of Archer's Rock, a bare rocky islet will be seen nearly ahead and about half a mile off; and a spar-buoy with horizontal stripes will appear a little to the eastward. The

Gray's Rock. islet is Gray's Rock and the buoy is on Chappel's Ledge,—the channel passing directly between them. Gray's Rock bears E. ¼ N. from Peach's Point, one-third of a mile, and from Marblehead Light-house N. by E. ¾ E., nearly one mile distant, and should receive a berth of a hundred and fifty yards. There is from four to six fathoms water on both sides of it.

Chappel's Ledge is four hundred yards E. by S. from Gray's Rock, and may be said to lie in the middle of this channel, as it may be passed on either hand, although it is usual

Chappel's Ledge. to pass to the westward of it. If the wind be scant, however, while on the port tack bound in, edge to the eastward and go to the eastward of the ledge, entering the Cat Island Channel. Fifteen feet at mean low water is found on this shoal, and it bears NW. ¾ N. from the Lowell House cupola, eleven hundred yards distant. A spar-buoy, painted red and black in horizontal stripes, is placed on the eastern side of the rock in four fathoms water.

When past Chappel's Ledge the red buoy on *Mid-channel Rock* will appear still farther to the eastward, nearly abreast and half a mile off. A red buoy will also be seen to the westward, one-third of a mile off, and a black spar-buoy will be seen nearly ahead, half a mile distant. The

Coney Island Ledge. red buoy to the westward is on *Williams' Rock*, in the South Channel, and the black spar nearly ahead is on the eastern point of Coney Island Ledge, an obstruction common to the Cat Island and Western channels. It is a mass of rocks,—many of them out at low water and others with from one to ten feet upon them,—lying off Coney Island, between the bearings of SE. ¼ S. and SW. by S. ¾ S. From the bare rocks Fort Pickering Light-house and Great and Little Aqua Vitæ beacons are in range. The other shoals lie between the bearings of SE. by S. and SW. by S. from the island, and extend a third of a mile off. The buoy (No. 3) is off the northeastern point of the dry ledge, in three fathoms.

When up with the buoy on Coney Island Ledge, the red spar-buoy on *Eagle Island Bar* will be seen on the eastern side of the channel, nearly half a mile off; and another black spar-

Coney Island Rock. buoy will appear to the westward, a quarter of a mile off. This is on Coney Island Rock, a sunken ledge with thirteen feet at mean low water and from three to five fathoms water all around it. It lies on the western side of the channel, a quarter of a mile NW. by N. from Coney Island Ledge and the same distance NE. by E. from Coney Island. The buoy is marked No. 5, and is placed in three fathoms on the eastern side of the rock.

Passing the buoy on Coney Island Rock, another black buoy will be seen to the eastward and a quarter of a mile ahead. This is on Haste Rock, the easternmost point of the exten-

Haste Rock. sive shoals surrounding The Great Haste. It has eight feet at mean low water, and bears N. from Coney Island, a third of a mile distant, and is an eighth of a mile SE. by E. ½ E. from The Great Haste. The buoy is marked No. 7, and is placed in three fathoms on its eastern side. When up with this buoy and in the Main Ship Channel, you will pass, first, The Great Haste, a bare rocky islet, surrounded by shoals, a mile and a quarter NE. by E. from Naugus Head and the same distance E. by N. from Fort Pickering Light-house. It should receive a berth of a quarter of a mile to the westward and southward.

The Little Haste is a ledge bare at two-thirds ebb, lying one hundred yards NW. ¾ N. from The Great Haste. It is easily recognized by its beacon,—a large spar with a cask on top, painted black,—placed on the middle of the rock. This beacon must receive a good berth to the westward and southward from all except vessels of very light draught. *The Little Haste.*

Still farther to the northwestward of The Great Haste extends Haste Shoal, which lies in a N NW. and S SE. direction, and extends from The Little Haste beacon an eighth of a mile. It is the turning point in the Main Ship Channel, and marks the boundary between the Outer and Inner harbors. A black spar-buoy (No. 13) is placed in sixteen feet water on the northern end of this shoal. Vessels of light draught may, however, pass between this buoy and the beacon on The Little Haste. *Haste Shoal.*

Being now in the Inner Harbor, the channel leads between Salem Neck on the west and the ledges and flats which make off from Naugus Head in a northeasterly direction. A black spar-buoy will be seen on the eastern side and a granite monument on the western side of the channel. The black buoy is on The Middle Ground, a long flat running to the southwestward from The Great Haste three-quarters of a mile. It is awash at low water in several places, and there are many spots upon it with four and five feet at lowest tides. The buoy (No. 15) is placed in twelve feet on the western edge of the flat, and bears SW. by W. ¾ W. from Haste Shoal buoy, five-eighths of a mile distant. It may be left to the eastward and approached quite closely; but the sailing-lines give it a good berth. *The Middle Ground.*

The granite beacon on the western side of the channel, off the northeastern point of Winter Island, is on Abbott's Rock, and is called **Abbott's Monument.** This ledge is dry at low water, bears W. ¾ N. from The Middle Ground buoy, and is three hundred yards from the northern end of Winter Island. The monument, which is on the highest part of the rock, is of granite, pyramidal in shape, and surmounted by a wooden staff with an open-work cage on top,—staff and cage being painted red. Vessels approaching at night will find it almost impossible to see this monument, as it is low and is projected against the land; but the erection of the lights on Fort Point and Derby Wharf enables one to avoid this danger. So long as Derby Wharf Light-house is kept open to the eastward of Fort Pickering Light-house this ledge cannot be struck, and the range of the two lights will carry you safely past The Haste and up to The Middle Ground buoy. *Abbott's Rock.*

After passing Abbott's Monument, another granite beacon will be seen on the eastern side of the channel, and a red spar-buoy a little to the westward of it. This beacon is on Great Aqua Vitæ Ledge, a mass of rocks, dry at half-tide, lying on the southwestern end of The Middle Ground. The monument is a pyramidal granite structure, surmounted by a wooden staff and cage,—the latter being painted black,—and marks the point of junction between the South and Main Ship channels. It is to be left to the eastward by vessels using the latter and to the northward by those using the South Channel. The monument bears from *Great Aqua Vitæ Ledge.*

	Mile.
Fort Pickering Light-house, E. by S. ¼ S. ——— a little more than	⅛
Naugus Head, NE. ⅛ E. ———	⅛
The Great Haste, SW. by W. ¾ W. ———	⅞

The red spar-buoy seen to the southward and westward of the monument on Great Aqua Vitæ is on Knapp's Rock, which has eight feet at low water. It is in the South Channel, but obstructs both channels, lies nearly W. from Great Aqua Vitæ monument, nearly two hundred yards off, and is exactly abreast of Fort Pickering Light-house. The buoy (No. 10) is placed in seven feet water on the southern side of the rock. *Knapp's Rock.*

When abreast of Fort Pickering Light-house a red spar-buoy will be seen on the starboard bow. This is on Half-Tide Rock, which lies off the southern end of Winter Island, one hundred and fifty yards from it, and is awash at low water and bare at extreme low tide. The buoy is marked No. 12, and placed in twelve feet off the southern end of the ledge. *Half-Tide Rock.*

In the upper part of the Inner Harbor the flats make off from the shore a long distance; but the approach is gradual and the lead will be the best guide.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING SALEM HARBOR BY THE WESTERN OR MARBLEHEAD CHANNEL.

I. ***Coming alongshore from Broad Sound.***—The course alongshore from about a mile off Nahant Head is NE. ¼ E. until Marblehead Light-house bears N NW., when steer for it until Baker's Island Light-houses bear NE. ¼ E. and you have seven fathoms, hard bottom. Now steer N., and *this course made good will lead*, with not less than four and a half fathoms, clear of all dangers in this passage, but

Sailing Directions--Marblehead Channel. runs pretty close to many of them. They are all buoyed, however, and in day-time, with a fair wind, no difficulty will be found. Continue this course until Fort Pickering Light-house bears **W.** ½ **S.**, with six fathoms water, when the black buoy on Haste Rock will be abeam. Then steer **NW. Northerly**, carrying not less than four fathoms, until the lights on Fort Pickering and Derby Wharf are in range on a bearing of **SW.** by **W.** ¾ **W.** Now steer for the lights (keeping the range and carrying not less than four and a half fathoms) until Hospital Point Light-house bears **N.** ¾ **E.**, when steer **SW.** ¾ **W.** into the Inner Harbor. *Or*, on the **N.** course, when Fort Pickering Light-house bears **W.** ½ **S.**, steer **N.** by **W.** ¾ **W.** (instead of **NW. Northerly**) until the lights on Derby Wharf and Fort Pickering are in range. (On this course there will be five fathoms.) Then steer for the lights as before, and proceed to the anchorage. This answers better than the former course in case the flood sets strongly on to The Haste.

The above courses pass three-eighths of a mile to the eastward of Tom Moore's Rocks; an eighth of a mile to the eastward of Marblehead Rock; a quarter of a mile to the eastward of Lasque's Ledge; a hundred and fifty yards to the westward of Archer's Rock; an eighth of a mile to the eastward of Gray's Rock; a hundred and fifty yards to the westward of Chappel's Ledge; an eighth of a mile to the eastward of Coney Island Ledge; nearly half a mile to the westward of Eagle Island Bar buoy; an eighth of a mile to the eastward of Coney Island Rock; one-sixth of a mile (three hundred yards) to the eastward of Haste Rock buoy; a quarter of a mile to the eastward of The Great and The Little Haste; a quarter of a mile to the eastward, and then nearly two hundred yards to the northward and westward, of Haste Shoal buoy; one hundred and fifty yards to the westward of The Middle Ground buoy; an eighth of a mile to the eastward of Abbott's Monument; three hundred and fifty yards to the westward of the monument on Great Aqua Vitæ Ledge; an eighth of a mile to the westward of Knapp's Rock; and the same distance to the eastward of Half-Tide Rock.

II. ***Coming from the Southward, offshore.***—Bring Baker's Island Light-houses to bear **N.**, six miles off, and Marblehead Light-house **NW.** by **N.** ¾ **N.**, five miles and a half off, when there will be twenty-two fathoms, dark grey sand and gravel, and you must steer for Marblehead Light-house until Baker's Island Light-houses bear **NE.** ¼ **N.**, with seven fathoms water. Then steer **N.** and proceed as before directed.

III. ***Coming from the Eastward, or from sea.***—Bring Baker's Island Light-houses to bear **NW.** by **N.** ¾ **N.** and Marblehead Light-house **NW.** by **W.**, when you will be in about twenty-six fathoms, green mud and gravel. Now steer for Marblehead Light-house until Baker's Island Light-houses bear **NE.** ⅓ **N.** and the Lowell House (on Cat Island) **N.** by **E.** (On this course not less than eight fathoms water can be carried.) When on this bearing Marblehead Rock will be half a mile distant and you will be in about nine fathoms. Now steer **NW.** ½ **N.**, with not less than eight fathoms water, until Marblehead Light-house bears **W.** by **N.** ¼ **N.** and Baker's Island Light-houses **NE.** ¾ **E.** and you are in five fathoms; when steer **N.** and proceed as above directed.

Strangers are not advised to use the Western Channel at night past Marblehead Point. It is best in such a case to continue the course **NW.** ½ **N.** until Marblehead Light-house bears **S.** by **W.** ¾ **W.** and you are in six fathoms water; when **SW.** ½ **W.** will lead safely into Marblehead Harbor, where anchor until daylight; or **NE.** ½ **E.** will lead, with not less than four fathoms, into the Cat Island Channel. In this latter case continue the course until Hospital Point Light-house bears **NW.** by **N.**, with seven fathoms water; when steer **N.** by **W.** ¾ **W.**, and proceed as directed for the Cat Island Channel.

SOUTH CHANNEL.

This channel leaves the Western Channel abreast of Marblehead Entrance and leads along the northern shores of Marblehead Peninsula into the Inner Harbor. It is narrow, crooked, and entirely unfit for strangers; but is much used by coasters and fishermen familiar with its many obstructions, as it avoids the long detour which they would otherwise have to make in rounding The Haste. The channel is well buoyed and has usually smooth water.

DANGERS

IN APPROACHING AND ENTERING SALEM HARBOR BY THE SOUTH CHANNEL.

The first danger met with in this channel, after passing Archer's Rock buoy, will be found on the western side of the channel. It is called Selman's Berth, has six feet at mean low water and five at low spring tides, and is marked by a black spar-buoy (No. 1) placed in three and a half fathoms

off the eastern point of the ledge. Selman's Berth is a long ledge lying off the mouth of Dolliber's Cove, and extending nearly E. and W.,—its eastern point being a quarter of a mile from Peach's Point and five-eighths of a mile NW. from Archer's Rock buoy. From Marblehead Light-house the shoal of the ledge bears N. ½ E., five-eighths of a mile (eleven hundred yards) distant. ***Selman's Berth.***

Gray's Rock lies on the eastern side of the channel, nearly abreast of Selman's Berth. It is a bare rocky islet, one-quarter of a mile NE. from the buoy off Selman's Berth; one-third of a mile E. ¼ N. from Peach's Point; and one mile N. by E. ¾ E. from Marblehead Rock; and should receive a berth of at least one hundred and fifty yards. ***Gray's Rock.***

Passing between Gray's Rock and Selman's Berth, two buoys will be seen ahead,—the eastern-most being red and the other black, and both are spars. The red buoy is on Williams' Rock, which lies on the eastern side of the channel, and is a sunken rock, with twelve feet at mean low water, lying three hundred and fifty yards NW. from Gray's Rock; three-eighths of a mile S. from Coney Island; and five hundred yards E NE. from Peach's Point. The buoy (No. 2) is placed in three fathoms on the western point of the ledge; and *a rock with fourteen feet* will be found about two hundred yards W NW. from it. ***Williams' Rock.***

The black buoy is on The Kettlebottom, which lies exactly in the middle of the channel and is bare at extreme low tides. It is a small rock, and should be marked by a red and black striped buoy. It is four hundred yards W. by N. from Gray's Rock and about a hundred and fifty yards from the red buoy on Williams' Rock, and the buoy (No. 3) is placed in five fathoms on its northeastern point. It is usually left to the westward, but may be left to the eastward by giving it a berth of a little over a hundred yards. ***The Kettlebottom.***

On the western side of the channel you must look out for Outer Point Rock, which is part of a ledge making off from Peach's Point in an E NE. direction about an eighth of a mile, with three feet at mean low water. On its northeastern point there was formerly placed a black spar-buoy in fourteen feet at low water. Vessels passing through between this ledge and The Kettlebottom have a channel nearly a hundred and fifty yards wide, with not less than three fathoms at low water; but the usual course is, however, between The Kettlebottom and Williams' Rock. ***Outer Point Rock.***

After passing The Kettlebottom the channel runs nearly NW., and a red spar and black spar-buoy will be seen marking the eastern and western boundaries. The red buoy is on The Triangles, a sunken rock on the northeastern side of the channel, with four feet at low water. From Williams' Rock buoy it bears NW. ¼ W., three-eighths of a mile distant; from Peach's Point N. ½ E., a third of a mile; and from Coney Island SW. ¾ W., six hundred yards. There is from eighteen to twenty feet water to the northward of this rock, but strangers must never attempt this passage. The buoy, which is marked No. 4, is placed in fifteen feet on the southwestern side of the ledge and may be passed close-to. ***The Triangles.***

Abreast of the buoy on The Triangles, on the southwestern side of the channel, is the black buoy on The Outer Endeavors, or *Endeavor Rock*, as it is sometimes called. It is the northern point of a ledge running nearly N. from Peach's Point, which has several outcropping rocks with from two to nine feet water upon them. The Outer Endeavors has four feet upon it at lowest tides, and is a quarter of a mile N. by W. from the eastern extremity of Peach's Point; and from The Triangles it bears SW. by S., about two hundred yards distant. The buoy, which is marked No. 5, is placed in sixteen feet on the northeastern side of the rock,—the channel leading directly between it and the buoy on The Triangles. Not quite a hundred yards inshore of The Outer Endeavors, and on the same ledge, is *another sunken ledge with eight feet at lowest tides;* and an eighth of a mile inshore of the buoy on The Outer Endeavors is a rock, called *The Inner Endeavors*, which is bare at lowest tides and awash at mean low water. One buoy serves for all. ***The Outer Endeavors.***

After passing between The Triangles and The Outer Endeavors the channel turns more to the westward, and a black spar-buoy (No. 7) on the southern side of the channel is met with. This buoy is on the northern point of Wellmann's Ledge, in fifteen feet water, and must be left to the southward. Wellmann's Ledge lies NE. from Fluent's Point, three hundred yards distant, and has ten feet at lowest tides. It is a detached rock and has good water on all sides; and the buoy on its northern side bears W. by N. from The Outer Endeavors buoy, a third of a mile distant. ***Wellmann's Ledge.***

Passing the buoy on Wellmann's Ledge, a red spar-buoy will be seen ahead on the northern side of the channel. This is on Stone's Rock, which has eight and a half feet at mean low water, and lies W NW. from the black buoy on Wellmann's Ledge, an eighth of a mile distant; and from Fluent's Point it bears N. by E., three hundred and fifty yards distant. The buoy which marks it is numbered 6, and is placed in fifteen feet at low water on the southwestern side of the rock. ***Stone's Rock.***

To the northward of Stone's Rock buoy, about two hundred yards distant, will be seen a red spar with two prongs on top. This is the beacon on *Little Aqua Vitæ Ledge*, which is bare at half-

tide, and lies E. by S. ¼ S. from the monument on Great Aqua Vitæ, distant three hundred yards. The beacon indicates a passage between it and Stone's Rock buoy, and such a passage does exist, but should not be attempted by any but those thoroughly familiar with every inch of the way. It is entirely unsafe for ordinary use.

Caswell's Rock. When abreast of Stone's Rock, another red buoy will be seen on the northern side of the channel, about three hundred yards off. This is on a sunken rock, with eight feet at lowest tides, called Caswell's Rock, which is nearly three hundred yards SW. by W. ½ W. from Little Aqua Vitæ beacon. The buoy is marked No. 8, and is placed in ten feet on the southwestern side of the ledge.

Knapp's Rock. When up with the buoy on Caswell's Rock the red spar-buoy on Knapp's Rock will be seen. Knapp's Rock forms the southwestern extremity of The Middle Ground, has eight feet at mean low water, and is exactly at the junction of the South Channel with the Inner Harbor. From the monument on Great Aqua Vitæ Ledge it bears W., nearly two hundred yards off. The buoy is marked No. 10, and is placed in seven feet water on the southern side of the rock. When past it the Inner Harbor is fairly entered.

When fairly inside the harbor and preparing to anchor, beware of *Half-Tide Rock*, which lies off the southern end of Winter Island, one hundred and fifty yards from it. It is bare at extreme low water, and is marked by a red spar-buoy (No. 12) placed in twelve feet off its southern end.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING SALEM HARBOR BY THE SOUTH CHANNEL.

This channel will only do in the day-time. Steer NNW. for Marblehead Light-house until Baker's Island Light-houses bear NE. ½ N. and you are in seven fathoms water. Then steer N. until abreast of the spar-buoy (with horizontal stripes) on Archer's Rock, and in seven fathoms. Then steer NW. by N. ½ N., which course will lead, with not less than five fathoms, directly between Williams' Rock and The Kettlebottom. (On this course, remember that the flood sets directly up the channel, but that the ebb sets almost directly across it, and therefore be careful in going in or out on the ebb not to be set on to Gray's Rock or Williams' Rock.) When exactly between the red buoy on Williams' Rock and the black buoy on The Kettlebottom, steer NW. ¼ W., which course made good will lead, with not less than fifteen feet, directly between the red buoy on The Triangles and the black buoy on The Outer Endeavors. Care must here be taken on both flood and ebb tides, as both set diagonally across the channel except at half-flood, when the current runs with the course up. When between the two buoys steer W. by N. ¼ N., which will lead, with not less than three fathoms, safely through into the Inner Harbor, leaving Wellmann's Ledge buoy to the southward close-to; Stone's Rock buoy to the northward, about fifty yards off; Caswell's Rock buoy to the northward, about eighty yards; and Knapp's Rock buoy to the northward, about a hundred yards. When abreast of this last buoy gradually edge away to the southward and westward, keeping about an eighth of a mile from Naugus Head, and anchor, after passing the head, at discretion. This channel should never be used except by those familiar with the set of the tidal currents. Fifteen feet at mean low water can be carried safely through it.

Salem Harbor is very convenient as a harbor of refuge for vessels bound to the eastward and met by an easterly gale, as the direction of the harbor is such that a foul wind for proceeding is a fair wind into the harbor, and a fair wind for proceeding is also a fair wind out.

The above remark is equally true of Gloucester Harbor for vessels bound to the southward.

ICE IN SALEM HARBOR.

That portion of the Inner Harbor of Salem lying above **Phillips' Wharf** (near Derby Wharf Light-house) is usually closed by ice every winter during the months of January and February; but the formations (local in their character) rarely extend beyond this point except on an average of about once every five years, when they have been known to reach as far out as The Haste, and, occasionally, as far as Eagle Island. This island has always been considered as marking the extreme limits of the ice; but the winter of 1874–75 was an exception to the rule,—being remarkable both for the extent, duration and thickness of the formations. During this very cold winter (the severest experienced for many years) the formations began as usual in the upper part of the Inner Harbor about the first of January, and gradually extended until about the middle of that month, at which time they had reached as far as Fort Pickering. Still continuing to increase in extent and thickness, the ice reached The Haste about the 15th of February; and on the 21st of that month no open water could be seen inside of Baker's Island. During this time the movements of sailing-vessels (without the assistance of tug-boats) were considerably delayed from about the 15th of January to the 26th day of February; and from the 15th to the 26th of the latter month the Inner Harbor was closed to the

PLATE No.1496

COAST
FROM CAPE ANN
TO NAHANT

Scale 80,000

1879

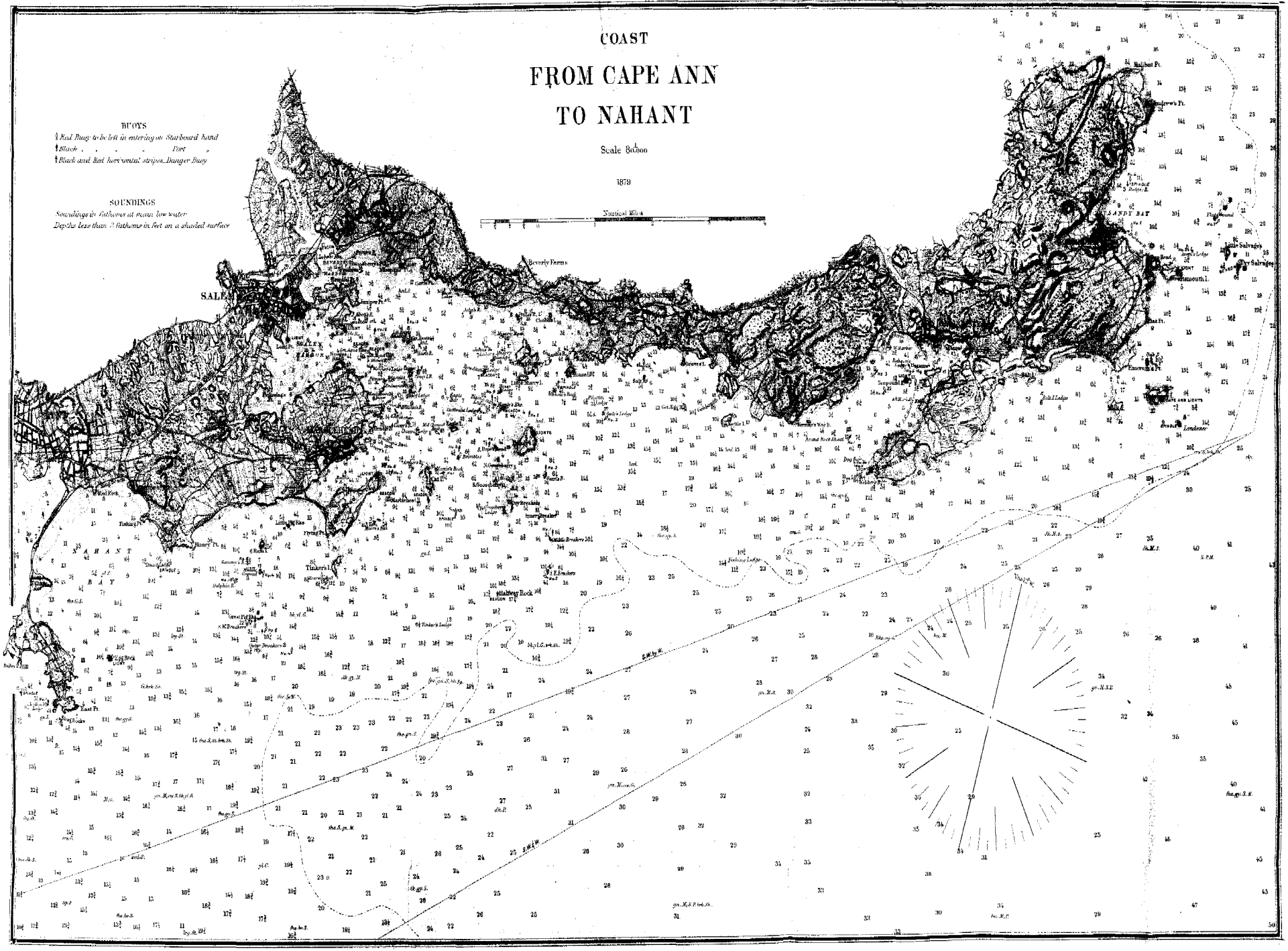
Nautical Miles

BUOYS

Red Buoy to be left in entering on Starboard hand
Black . . . . . Port . .
Black and Red horizontal stripes Danger Buoy

SOUNDINGS

Soundings in Fathoms at mean low water
Depths less than 3 fathoms in feet on a shaded surface



ingress and egress of vessels of every description. The formations in the approaches broke up as far as Fort Pickering on the 23d, and as far as Phillips' Wharf on the 26th of February; but above this last-mentioned point the ice did not finally disappear until the latter part of March.

Northerly and northwesterly winds are most favorable to local formations in Salem Harbor. Winds from the southward and westward, during light formations, have a tendency to carry the ice off to sea; while those from NE. to SE. create a swell which usually breaks up the formations both in the harbor and its approaches. The tidal currents are not strong enough to have any influence on the ice, either during its formation or afterwards.

The buoys and spindles in Salem Harbor are rarely carried away and suffer but little damage from the ice during its prevalence, except in very severe winters, like the one mentioned above,—during which the beacons on Little Haste and Little Aqua Vitæ ledges were carried away.

MARBLEHEAD HARBOR.

This harbor, formerly of considerable importance, is formed by a long and deep cove making to the southwestward between Marblehead Neck and the Peninsula, and is over a mile long and a third of a mile wide. At its southern end it is separated from the sea by a narrow strip of beach called **Marblehead Beach**, which joins Marblehead Neck to the mainland.

Fort Point.

The entrance to Marblehead Harbor is between Fort Point on the northwest and Marblehead Point on the southeast. Fort Point is a round bluff point, not high, upon which is built an earthwork of regular shape, called **Fort Sewall**. It is the first point to the southward of Gerry's Island, (see page 555,) and is half a mile below Peach's Point.

Marblehead Light-house.

Marblehead Point is the northeastern end of Marblehead Neck, and upon it is built Marblehead Light-house. The point is about twenty feet high and bare of trees, and shoals extend off N. and E. from it. The light-house is a white tower, and shows a fixed white light, of the sixth order, from a height of forty-three feet above sea-level. This light is visible eleven miles, and is in

Latitude	42° 30′ 18″ N.
Longitude	70° 50′ 2″ W.

Between Fort Point and Marblehead Point the width of the entrance to Marblehead Harbor is three-eighths of a mile, or seven hundred yards.

The town of **Marblehead** occupies the western shore of the harbor and was formerly a town of considerable maritime importance, but now fits out fishing-vessels mainly. It is connected with Salem by a railroad.

DANGERS

IN APPROACHING AND ENTERING MARBLEHEAD HARBOR.

I. ***By the Main Channel, coming from the Southward and Eastward.***—This entrance is by the Western or Marblehead Channel into Salem, and the first danger met with coming from seaward is Half-Way Rock, (see page 552,) which is a small but very bold rocky islet, lying one mile and three-quarters **E SE.** from Cat Island and a little over two miles **S. ¼ E.** from Baker's Island Light-houses. On its summit there was formerly a beacon, but all of this has now gone except the foundation, which shows as a white boulder on top of the rock. It is the intention to rebuild this beacon at an early date. This rock is the most prominent of the land-marks indicating the entrance to Marblehead, and is almost invariably steered for by vessels approaching from the eastward. When up with it they either run up the Cat Island Channel until they have passed Cat Island and open Marblehead Harbor, or steer off to the westward towards Marblehead Light-house and enter by the Western Channel. Sailing directions for both channels will be given. ***Half-Way Rock.***

Coming from the southward, alongshore, vessels must not stand to the northward too far when near Tinker's Island, to avoid The Roaring Bull, which lies about three hundred yards **SW.** by **S.** from that island, is awash at low water and bare at low spring tides, and has from five to nine fathoms water on all sides of it. A red spar-buoy (No. 2) is placed in four fathoms on its southeastern side. This buoy is painted red as a guide to Swampscott, and vessels do not approach it when bound into Marblehead unless standing inshore on a wind. ***The Roaring Bull.***

Tom Moore's Rocks lie off the eastern side of Marblehead Neck and are bare at one-third ebb. They are a group of rocks lying half a mile to the northward of Tinker's Island and nearly three-quarters of a mile **S.** of Marblehead Light-house. They are one-fifth of a mile (nearly four hundred yards) from the shore of Marblehead Neck, and are marked by a black spar-buoy (No. 1) placed in three and a half fathoms on the eastern end of the ledge. ***Tom Moore's Rocks.***

Marblehead Rock is really two rocky islets connected at low water, lying **SE.** by **E.** from the light-house, a quarter of a mile from shore. They are bold-to on their northern and eastern sides, and there is a good channel with five fathoms water between them and the shore. The summit of the easternmost islet is crowned by a beacon built of granite, round and tapering at the top, and surmounted by a spar five feet long, painted black. The body of the beacon is painted black and white in horizontal stripes. ***Marblehead Rock.***

The next danger met with, also on the western side of the channel, is called Lasque's Ledge, and sometimes, though erroneously, *Half-Tide Rocks*. It is a long rocky shoal making off in an **E.** ½ **N.** direction from Marblehead Point three hundred and fifty yards. Its eastern end bears ***Lasque's Ledge.*** **NW.** by **N.** ½ **N.** from Marblehead Rock beacon, four hundred yards distant, and has a black spar-buoy (No. 3) in three and a half fathoms upon it. The western half of Lasque's Ledge, which is dry at low water, is properly called *Half-Tide Rocks*, and extends from Marblehead Point to the eastward one hundred and sixty yards. The buoy is a hundred and fifty yards to the eastward of the end of these bare rocks.

Archer's Rock, which lies in the middle of the Western Channel into Salem Harbor, is five hundred yards to the westward of Cat Island and half a mile **NE.** by **N.** from Marble- ***Archer's Rock.*** head Rock, and has ten feet at low water and good water all around it. A spar-buoy, painted red and black in horizontal stripes, is placed in three and a half fathoms on the southwestern side of the rock; and vessels bound into Marblehead leave it well to the eastward unless the wind is scant.

Gordon's Rock, which is part of the ledge making off in a **N.** by **E.** direction from Marblehead Point, has seven feet at low water, and is about eighty yards from the point. A black ***Gordon's Rock.*** spar-buoy (No. 5) is placed in three fathoms off the northern point of this ledge, and you must leave it to the southward,—giving it a berth.

After passing Gordon's Rock and steering into the harbor, another black spar-buoy will be seen on the port bow. This is on Boden's Rock, which lies off the eastern shore of the ***Boden's Rock.*** harbor, half a mile **SW.** by **W.** from Marblehead Point and a little over a hundred yards from **Boden's Point.** The buoy (No. 7) is placed in three fathoms off the northwestern side of the ledge, which has eight feet at low water.

After passing Boden's Rock there are no obstructions except the flats making out from the southwestern end of the harbor. The approach to these is gradual, and the head will be the best guide.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MARBLEHEAD HARBOR.

I. ***By the Main Channel, coming from the Southward, alongshore.***—The course alongshore from about a mile off Nahant Head is **NE.** ¼ **E.** until Marblehead Light-house bears **N NW.**, when steer for it until Baker's Island Light-houses bear **NE.** ¼ **N.**, with seven fathoms, hard bottom. Then steer **N.** until Marblehead Light-house bears **W.** by **N.** ½ **N.** and Baker's Island Light-houses **NE.** ¾ **E.** (On this course there will be four and a half fathoms.) Now steer **NW.** ½ **N.**, carrying not less than six fathoms, until Marblehead Light-house bears **S.** by **W.** ¾ **W.**, with six fathoms water. The course into the harbor is now **SW.** ½ **W.**, and anchorage off the town may be had in from three to four fathoms, soft bottom. *But vessels may, if necessary, (especially in day-time,)* pass Lasque's Ledge and bring Marblehead Light-house to bear **SW.** ¼ **S.**, and steer **W.**, with not less than five fathoms, until the light bears **S.** ½ **E.**; when **SW.** ½ **W.**, as before, will lead safely in.

These courses pass three-eighths of a mile to the eastward of Tom Moore's Rocks; an eighth of a mile to the eastward of Marblehead Rock; a third of a mile to the westward of Archer's Rock; two hundred yards to the eastward of Lasque's Ledge; an eighth of a mile to the westward of Gordon's Rock; and a hundred yards to the westward of Boden's Rock.

II. ***Coming from the Southward, offshore.***—Bring Baker's Island Light-houses to bear **N.**, six miles off, and Marblehead Light-house **NW.** by **N.** ¾ **N.**, five miles and a half off, when there will be twenty-two fathoms, "sand and gravel." Now steer for Marblehead Light-house until Baker's Island Light-houses bear **NE.** ¼ **N.**, with seven fathoms water. Then steer **N.** until Marblehead Light-house bears **W.** by **N.** ½ **N.**, with five fathoms, when steer **NW.** ½ **N.**, and proceed as above directed.

III. ***Coming from the Eastward.***—Bring Baker's Island Light-houses to bear **NW.** by **N.** ¾ **N.** and Marblehead Light-house **NW.** by **W.**, with about twenty-six fathoms, "green mud and gravel," and steer for Marblehead Light-house until Baker's Island Light-houses bear **NE.** ¾ **N.** and the Lowell House (on Cat Island) **N.** by **E.** On this course not less than eight fathoms may be carried, and Marblehead Rock will be half a mile distant when at the bearing. Now steer **NW.** ½ **N.**, and proceed as before. *Or*, steer **W.** for Half-Way Rock, (passing it on either hand in about six fathoms,) and then **W.** by **N.** ¼ **N.** for Marblehead Light-house, carrying not less than eight fathoms, until Baker's Island Light-houses bear **NE.** ¾ **E.**, with five fathoms. Now steer **NW.** ½ **N.**, and proceed as above directed.

IV. ***By the Cat Island Channel, coming from the Eastward.***—Steer **W.** for Half-Way Rock, passing it on either hand in about six fathoms, and then **NW.** ½ **W.**, through the Cat Island Channel,

carrying not less than five fathoms, until you are up with the red buoy on Mid-channel Rock, which should be about three hundred yards off. Baker's Island Light-houses should now bear E. by N. ¾ N. and Fort Pickering Light-house W NW., with about seven fathoms. Now steer SW. ½ W. into Marblehead Harbor, carrying not less than four fathoms water.

These courses pass a quarter of a mile to the westward of Gooseberry Rock; three hundred yards to the eastward of Satan's Rock; an eighth of a mile to the eastward of Martin's Rock; a quarter of a mile to the westward of The Brimbles; a hundred and fifty yards to the southward of Chappel's Ledge; a quarter of a mile to the northward of Archer's Rock; and five hundred yards to the southward of Selman's Berth.

DANGERS

IN APPROACHING AND ENTERING MARBLEHEAD HARBOR.

II. ***From the Northward, by the passage between Baker's Island and Eagle Island.***—This channel, which is frequently used by vessels coming from the northward bound to Marblehead, is narrow and in some places dangerous to those unacquainted with the set of the tidal current, but it is well buoyed, and may be used with comparative safety in the day-time. After passing Powers' Rock the channel leads to the southward between Hardy's Rock Shoal and Baker's Island. The first danger met with then is Hardy's Rock Shoal, (see also page 547,) which has two feet at lowest tides, and extends off from Hardy's Rocks in a NE. direction nearly two hundred yards. A black spar-buoy (No. 7) is placed off its NE. end in three fathoms. It bears W. by N. ½ N. from Baker's Island Light-houses, half a mile distant, and S. by W. from Little Misery, a third of a mile, and it must be left to the westward by vessels using this channel notwithstanding its color. ***Hardy's Rock Shoal.***

In coming into this channel the western shore of Baker's Island must receive a good berth—say a third of a mile (six hundred yards)—to avoid the shoal ground making off from that shore to the westward, which is known as Baker's Island Shoals and is not buoyed. These shoals extend a quarter of a mile from the island and in some places more than that distance, and vessels must hug the western side of the channel when passing Hardy's Rock Shoal. There is a depth of seven feet at low water two hundred and fifty yards off the northwestern point of Baker's Island. ***Baker's Island Shoals.***

A little to the southwestward of the black buoy on Hardy's Rock Shoal will be seen a black beacon, composed of a spar with two triangles on top, which is on Hardy's Rocks, dry at half-tide. The beacon, which is known as **Hardy's Rock Beacon**, bears W. by N. from Baker's Island Light-houses, a little over half a mile distant, and is about an eighth of a mile W. by S. ½ S. from the black buoy on Hardy's Rock Shoal. It must be left to the westward notwithstanding its color. ***Hardy's Rocks.***

The black buoy that will be seen about four hundred yards W. by N. from Hardy's Rock Beacon is not in this channel, but on *Rising States Ledge*, on the southern side of the Main Ship Channel into Salem. After passing Hardy's Rocks the channel leads towards Eagle Island and passes midway between two black buoys. That to the westward is on Cut-throat Ledge, which is a sunken rock, with six feet at lowest tides, lying SW. by W. ½ W. from Hardy's Rock Beacon, distant nearly half a mile; NE. by N. ¼ N. from Eagle Island, about one-third of a mile; and W. ½ S. from Baker's Island Light-houses, one mile off. A black spar-buoy (No. 11) is placed in twenty-one feet on the northeastern end of the ledge; and the shoal water extends two hundred yards to the westward from it. ***Cut-throat Ledge.***

There is a passage between Rising States Ledge and Cut-throat Ledge with from four to seven fathoms water, but it is rarely used.

The black spar-buoy on the eastern side of the channel and nearly opposite to Cut-throat Ledge buoy is on Pope's Head Shoal. **The Pope's Head** is a bare rock, lying eleven hundred yards SW. by W. from Baker's Island Light-houses and three-eighths of a mile W. ⅜ S. from the southern point of Baker's Island, and there is from twelve to eighteen feet water between it and the island. Pope's Head Shoal is nearly two hundred yards W. by S. from The Pope's Head, and has seven feet at low water, but at low spring tides there is only six feet upon it. A black spar-buoy (No. 1) is placed in fifteen feet on the western side of the ledge. ***Pope's Head Shoal.***

When up with the buoy on Pope's Head Shoal, another black buoy will be seen half a mile to the southwestward. This is on The Brimbles, a dangerous ledge, awash at low water, which lies half a mile SW. by W. ¼ W. from Pope's Head Shoal buoy and about five hundred yards SE. ¼ S. from Eagle Island, and has from four to six fathoms water on all sides of it. From the Lowell House cupola it bears NE. ½ N., a little over half a mile distant. This shoal is about two hundred yards in extent, and a black spar-buoy (No. 3) is placed in twenty-one feet off its northwestern end. ***The Brimbles.***

When past Eagle Island, and in the Cat Island Channel, the course leads between a red spar and a black spar-buoy,—leaving each a quarter of a mile off. The red buoy on the northern side is on Mid-channel Rock, a sunken ledge with sixteen feet at mean low water. It bears N. ¼ W. from the Lowell House cupola, eleven hundred yards distant, and W. by S. ¾ S. from Eagle Island, three hundred and fifty yards distant. The buoy is marked No. 4 and is placed in three and a half fathoms on the southwestern end of the ledge.

Mid-channel Rock.

The black spar-buoy which is on Martin's Rock is also in the Cat Island Channel. The rock is a sunken ledge, with twelve feet at mean low water, lying a quarter of a mile from the northern end of Cat Island; and from the Lowell House it bears NE. by N. ¼ N., a quarter of a mile distant. There is from three to five fathoms water all around it, but the sailing-lines of this channel leave it a quarter of a mile to the southward and westward. The buoy is marked No. 1 and is placed in twenty-one feet water off the northeastern side of the rock.

Martin's Rock.

When abreast of Mid-channel Rock buoy, a buoy, painted red and black in horizontal stripes, will be seen to the westward. This is on Chappel's Ledge, a detached rock, with fifteen feet at mean low water, which lies on the northern side of this channel, and is eleven hundred yards NW. ¾ N. from the Lowell House cupola and the same distance E. ½ S. from Peach's Point. The buoy is in four fathoms on the eastern side of the rock, and is to be left to the northwestward by vessels bound up this channel.

Chappel's Ledge.

Passing Chappel's Ledge there will be seen, bearing about S., another spar-buoy, painted red and black in horizontal stripes. This is on Archer's Rock, which has ten feet at low water, and lies on the southern side of this channel, five hundred yards W. from Cat Island. It is a detached rock, with four and five fathoms water all around it; and the buoy is on its southwestern side in three and a half fathoms.

Archer's Rock.

When past Archer's Rock two black spar-buoys will be seen to the southward. The easternmost buoy is on Lasque's Ledge, which is not in the way of vessels bound in by this channel unless they are beating in on a wind. It is a rocky shoal, making off in an E. ½ N. direction from Marblehead Point three hundred and fifty yards. Its eastern end bears NW. by N. ½ N. from Marblehead Rock beacon, four hundred yards distant; and the buoy (No. 3) is placed in three and a half fathoms on this end. The western half of this ledge is dry at low water and is called *Half-Tide Rocks.*

Lasque's Ledge.

The westernmost buoy is on Gordon's Rock and is about eighty yards N. by E. from Marblehead Point. The rock is a knubble upon the ledge which makes off in that direction from the point and has seven feet at low water. The buoy is marked No. 5, placed in three fathoms off the northern point of the ledge, and is to be left to the southward.

Gordon's Rock.

After passing Gordon's Rock and steering into the harbor another black spar-buoy will be seen bearing about SW. This is on Boden's Rock, which lies off the eastern shore of the harbor, half a mile SW. by W. from Marblehead Point and a little over a hundred yards from Boden's Point, and has eight feet at low water. The buoy (No. 7) is placed in three fathoms off the northwestern side of the ledge.

Boden's Rock.

After passing Boden's Rock there are no obstructions except the flats making out from the southwestern end of the harbor. The approach to these is gradual, and the lead will be the best guide.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MARBLEHEAD HARBOR.

V. ***From the Northward, by the passage between Baker's Island and Eagle Island.***—Steer W. by N. ¾ N. for Hospital Point Light-house, into the Main Ship Channel of Salem Harbor, and continue this course, carrying not less than eight fathoms, until Baker's Island Light-houses bear SE. ¼ S. and Hardy's Rock Beacon W SW., with nine fathoms water; when steer SW. ½ W., carrying not less than four fathoms, passing between Hardy's Rocks and Baker's Island and between Eagle Island and The Brimbles. On this course, when Hospital Point Light-house bears NW. ¾ N. and the Lowell House cupola S., and you are in about six fathoms, steer SW. by W. ¾ W. to Marblehead Entrance, carrying not less than six fathoms. When Marblehead Light-house bears S. ½ E., steer SW. ½ W. to the anchorage.

The above courses pass one hundred yards to the southeastward of the buoy on Hardy's Rock Shoal; the same distance to the westward of Baker's Island Shoals; nearly two hundred yards to the eastward of Hardy's Rock Beacon; two hundred and fifty yards to the eastward of Cut-throat Ledge; a quarter of a mile to the westward of Pope's Head Shoal; an eighth of a mile to the eastward of Eagle Island; the same distance to the westward of The Brimbles; a quarter of a mile to the southward of Mid-channel Rock; a quarter of a mile to the northward of Martin's Rock; a quarter of a mile to the southward of Chappel's Ledge; an eighth of a mile to the northward of Archer's Rock; and the same distance to the westward of Gordon's Rock.

This channel, depending for its courses on the bearings of the lights, may be used at night, especially by steamers. For sailing vessels it is rather unsafe on account of the flood-current setting nearly across it.

ICE IN MARBLEHEAD HARBOR.

This harbor is rarely obstructed by ice to such an extent as to become a hindrance to navigation; and even during the very cold winter of 1874–75 the harbor was so little obstructed by ice formations that many of the fishermen made it a refuge during the severest part of the winter, when it was impossible to get into either Gloucester, Salem or Lynn Harbor. From information furnished by those living in the vicinity it appears that vessels of every description could get inside of Marblehead Neck and find good anchorage every day during the winter,—the harbor being at no time obstructed by ice sufficiently strong to hinder navigation below **Gilbert's Wharf**. The formations of ice are entirely local, and during the severe winter mentioned above occurred only twice, and remained but a short time. The first formation commenced early in January and gradually extended so as to include nearly the entire harbor; but it almost completely disappeared on the 23d of the same month. On the 8th of February another formation occurred which was of about the same extent as the first, but heavier and of longer duration,—remaining until the 28th of the month, when it finally broke up and disappeared. No formations of importance occurred after this last-mentioned date. The ice in the approaches to the harbor was not sufficiently heavy to offer any very serious hindrance to the movements of vessels, as it was only thin "sheet-ice," which remained but a few hours at a time.

When the formations occurred in this harbor, and at the time of their disappearance, the wind was blowing strong from the **NW.** From this it would be natural to infer that the winds have but little influence, either in causing ice to form or to assist in carrying it off. The effect of the tidal current upon the ice formations is not remarkable,—the influence of the ebb having a slight tendency to remove drift-ice, while that of the flood is not noticeable.

BEVERLY HARBOR.

This small harbor lies at the western end of the bay of Salem, and is formed by the confluence of **Essex Branch, Beverly Creek** and **North River**,—three small streams which, uniting at this point, form a basin of irregular shape, on the northern shore of which is built the town of **Beverly**. The harbor is about three-eighths of a mile in diameter, full of flats and shoals, but with good water in the channel. It is crossed at its western end by two draw-bridges,—the county bridge, known as **Salem Bridge**, and the bridge of the Eastern Railroad Company.

DANGERS

IN APPROACHING AND ENTERING BEVERLY HARBOR.

This harbor is entered from the Main Ship Channel of Salem Harbor, and when abreast of Woodberry's Point the first obstruction will be seen ahead, marked by a black spar-buoy. This is Beverly Bar, a long shoal making out to the northward from Old Hospital Point (on Salem Neck) to a distance of three hundred and fifty yards, and obstructing the southern side of the entrance to the harbor. The buoy (No. 1) is placed in fifteen feet on the northern point of the shoal, and vessels must pass close-to to the northward of it. ***Beverly Bar.***

When up with the buoy on Beverly Bar, a red spar-buoy will be seen on the northern side of the channel and a granite beacon with a black top on the southern side. The buoy is on Porter's Rock, sometimes called *Middle Ground Ledge*, which lies on the northern side of the entrance, two hundred yards from shore and three hundred and fifty yards **NW.** by **W.** from the black buoy on Beverly Bar. It is dry at low water, and the buoy, which is marked No. 2, is placed in twelve feet on the southeastern side of the bare rock and must receive a berth of seventy-five yards to the northward. ***Porter's Rock.***

The granite monument is on Monument Bar, which also makes out from Salem Neck to the northward and is dry at the beacon. It is two hundred yards **W.** from the buoy on Beverly Bar and an eighth of a mile **S.** by **W.** from the red buoy on Porter's Rock. The beacon is a pyramidal, granite, crib-work monument, with a wooden staff surmounted by a black cage. It is placed on the northern end of the bar and should not be approached nearer than fifty yards. ***Monument Bar.***

After passing the beacon on Monument Bar the channel turns to the southward, and two red spar-buoys will be seen ahead. The nearest is on The Middle Ground, which is a shoal bar in mid-channel and is dry at extreme low tides. There is a rock, with ten feet, close to the buoy and a little to the eastward of it. The buoy (No. 4) is placed to the eastward of the ledge in twelve feet, and is two hundred yards **SW.** from Monument Bar beacon and three hundred and fifty yards **SE.** from **Tuck's Point.** ***The Middle Ground.***

Two hundred yards **SW.** from the buoy on The Middle Ground is the red buoy on The Shoal Ground, which extends off from Tuck's Point in a southerly direction four hundred yards, with part of it dry at low water. The buoy (No. 6) is placed in twelve feet off its southern end and marks the turning point of the channel, which here leads to the northwestward towards the town. ***The Shoal Ground.***

On the southern side of the channel, a hundred and twenty-five yards SE. by S. from the buoy on The Shoal Ground, is a granite monument, which is on Ram's Horn Rocks, dry at low water, and nearly two hundred yards from the northern shore of Salem Neck. The beacon is a square granite monument of crib-work, and is surmounted by a black wooden staff with a top like a sugar-loaf. It is to be left to the southward,—the channel leading directly between it and the red buoy on The Shoal Ground.

Ram's Horn Rocks.

The channel now turns to the northward towards the town, passing along the eastern side of the extensive flats making off from the northern end of Salem Peninsula, and a granite beacon will be seen on some dry rocks lying W SW. from Tuck's Point. These are the Lobster Rocks, a group of rocks which occupy the northeastern end of the flats on the western side of the channel, and are dry at half-tide. The beacon, which is a square granite crib-work with black top, is on the eastern end of the rocks and must be left to the westward. Passing this beacon the channel leads along the wharf-line, where you may anchor at pleasure, in three and a quarter fathoms at low water.

Lobster Rocks.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BEVERLY HARBOR.

On the W. ¼ N. course into the Outer Harbor of Salem, when Hospital Point Light-house bears N. by E. and Fort Pickering Light-house SW., with five and a half fathoms, steer NW. by W. until Monument Bar beacon bears W. (On this course there is not less than seventeen feet water.) Now steer W. by N. until abreast of the beacon and you are in six fathoms, when leave it to the southward and steer to the southwestward towards The Middle Ground buoy. Keep in mid-channel in about three and a half fathoms, leaving this buoy and that on The Shoal Ground to the westward and the beacon on Ram's Horn Rocks to the southward. When past these marks bring Tuck's Point to bear N. by W. ½ W. and steer NW. by N. ½ N., passing midway between the point and the beacon on Lobster Rocks in three and a half fathoms, and anchor off the town, in twenty feet at low water.

LIGHT-HOUSES.

Names.	Latitude.	Longitude West. In arc.	Longitude West. In time.	Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Baker's Island Light-houses... NW.	42 32 10	70 47 10	4 43 8.7	Fixed.	87	15
Baker's Island Light-houses... SE.	42 32 10	70 47 10	4 43 8.7	Fixed.	64	14
Hospital Point Light-house	42 32 48	70 51 22	4 43 25.5	Fixed.	63	13
Fort Pickering Light-house	42 31 36	70 51 56	4 43 27.7	Fixed.	32	10
Derby Wharf Light-house	42 30 59	70 53 2	4 43 32.1	Fixed red.	22	9
Marblehead Light-house	42 30 18	70 50 2	4 43 20.1	Fixed.	43	11

TIDES.

Corrected Establishment	11h 13m
Mean Rise and Fall of tides	9.2 ft.
Mean Rise and Fall of Spring tides	11.0 ft.
Mean Rise and Fall of Neap tides	7.6 ft.
Mean duration of Rise	6h 19m
Mean duration of Fall	6h 6m
Mean duration of Stand	0h 5m
Rise of highest tide observed	11.4 ft.

CURRENTS.

No.	Stations.	First Quarter. Set.	First Quarter. Drift.	Maximum. Set.	Maximum. Drift.	Last Quarter. Set.	Last Quarter. Drift.	Flood or Ebb.
1	Main Ship Channel, off The Haste...	SW. by W. ½ W.	0.30	W. by N.	0.37	NW. ½ W.	0.07	Flood.
		E. ½ S.	0.27	SE. ½ E.	0.62	SE. by S. ½ S.	0.50	Ebb.
2	Between Lowell's Island and Chappel's Ledge.	N NW.	0.05	N. by E. ½ E.	0.15	NE. ½ N.	0.17	Flood.
		NE. ½ E.	0.15	E. by N. ½ N.	0.21	E. ½ N.	0.02	Ebb.
3	Cat Island Channel, between Lowell's Island and The Gooseberries.	N. by W. ½ W.	0.02	N. by W.	0.10	N. by E. ½ E.	0.05	Flood.
		NE. by E.	0.14	E.	0.08	E. ½ S.	0.04	Ebb.

The above observations were made as far as possible when the influence of the wind was small. The set is given in magnetic bearings and the drift in nautical miles per hour. As will be seen, there is little velocity to the tidal current, so that mariners will generally be able to make their courses good without regard to tide.

VARIATION OF THE COMPASS.

The variation of the magnetic needle for 1879, on Marblehead Peninsula, is 11° 50′ W., and on Salem Neck it will be about the same. The present annual increase is about 2½′.

LIFE-SAVING STATIONS.

There is a life-boat station, under the rules of the Massachusetts Humane Society, at Manchester. There are also two boats inside the harbor of Marblehead.

NAHANT BAY.

From Flying Point, the southwestern extremity of Marblehead Neck, to Phillips' Point, the northeastern point of entrance to Nahant Bay, the direction is **W SW.**, and the distance two miles and three-eighths; but the shore-line between these two points curves away to the northward and around to the westward, thus forming a wide cove or bay. Marblehead Beach extends from Marblehead Neck about **W. ½ N.** for five-eighths of a mile. It is a narrow sand-beach, which separates Marblehead Harbor from the sea, and the town is visible over it. At the western end of Marblehead Beach begin the hills, which come abruptly down to the water's edge, and are from fifty to one hundred feet high. They are bare of all trees except fruit trees, and are cleared and settled. **Marblehead Beach.**

The high land continues in a **W SW.** direction for a mile to the eastern end of Phillips' Beach, which extends to Phillips' Point. This beach has a general course of **SW.** for about seven-eighths of a mile, and for half its length stretches at the foot of a low cliff, (about twenty feet high.) For the rest of the distance to Phillips' Point the land behind the beach is quite low and flat; but high wooded lands are visible in the distance. **Phillips' Beach.**

Phillips' Point is a high rocky point, the eastern half of which is from fifty to sixty feet high, mostly cleared and cultivated, and presenting a somewhat precipitous face. The western half is about eighty feet high and is thickly wooded. On the southwestern face are many houses, some of which are sea-side hotels. **Phillips' Point.**

Phillips' Point is the northeastern point of entrance to Nahant Bay, which forms one of the smaller subdivisions of Massachusetts Bay, and is nearly circular in form. It is contained between Phillips' Point on the northeast and the island, so-called, of Nahant on the southwest. Between these two points the bay is two miles and a half wide, and about two miles long to Lynn Beach, which separates it from Lynn Harbor, in Boston Bay. The village of **Swampscott** is situated on the northern shore of this bay, three-quarters of a mile **W.** from Phillips' Point, and is a great summer resort. The eastern part of the town of **Lynn** occupies a portion of its northwestern shores.

Fishing Point, the first headland on the northern shore to the westward of Phillips' Point, is a low but prominent rocky point, half a mile **W NW.** from Phillips' Point. It is cleared and settled,—being occupied by part of the village of Swampscott. The village itself presents quite a picturesque appearance,—being situated at the foot of steep wooded hills, which rise to a height of from one hundred to one hundred and fifty feet above sea-level. The rocky point upon which the main part of the settlement is built is three-eighths of a mile above Fishing Point, and is called **Blaney's Point** or **Blaney's Rock**. **Fishing Point.**

To the westward of Blaney's Rock will be seen the town of Lynn, with a long low beach, called **King's Beach**, extending in front of it. This beach is half a mile long, and is terminated by a low, bluff, rocky point, called **Red Rock**. This point is entirely bare of trees, and presents a somewhat precipitous face,—the effect of the washing of the sea.

A quarter of a mile to the westward of Red Rock begins **Lynn Beach**, a narrow strip of sand separating Nahant Bay from the harbor of Lynn. It extends in a **S. by W.** direction for a mile and a quarter to a high, bluff, rocky head, called Little Nahant. The surface of this headland (which would be an island but for the narrow strip of beach connecting it with the main) is covered with grass and has one or two trees upon it. Its eastern face is bold and steep and is known as **East Point**, or, to distinguish it from the point of the same name to the southeastward of it, **Little Nahant East Point.** **Little Nahant.**

On the south Little Nahant is connected with Nahant by a strip of beach nearly half a mile long, called **Little Nahant Beach.**

Nahant lies nearly **E. and W.** and is very irregular in shape. It is a high rocky peninsula with a precipitous face to the eastward, and a mile and a half long. It is occupied by a settlement which is mainly composed of summer cottages. Its eastern extremity is called **East Point**, and is a bluff headland occupied by a large hotel and out-buildings, surrounded by ornamental grounds. The roads over the peninsula are planted with trees, which in summer present a beautiful appearance when seen from the southward. **Nahant.**

Nahant is a great summer resort, and steamers ply regularly between it and Boston during the season. The landings are on the southern side, in the large cove formed by the curve of the southern shore, which is sometimes called **Nahant Harbor.**

Seven-eighths of a mile **N NE.** from East Point is a bold rocky islet sixty feet high, called Egg Rock. It is irregular in shape, lies nearly **E. and W.**, is an eighth of a mile long, and on its summit is built the light-house which is a guide to **Swampscott Harbor.** It rises from the keeper's dwelling (a square white cottage twenty-five feet high) and shows a fixed red light, of the fifth order of Fresnel, from a height of eighty-seven feet above sea-level, visible twelve miles. Its geographical position is **Egg Rock and Light-house.**

Latitude	**42° 25′ 58″ N.**
Longitude	**70° 58′ 52″ W.**

DANGERS

IN APPROACHING AND ENTERING NAHANT BAY OR SWAMPSCOTT HARBOR.

I. ***Coming from the Eastward, between Tinker's Island and Pig Rocks.***—The first danger met with by vessels using this channel lies **SW.** by **S.** from Tinker's Island, and is called

The Roaring Bull.

The Roaring Bull,—a dangerous ledge, awash at low water, and with four to nine fathoms water all around it. It lies half a mile **S.** ¾ **E.** from Flying Point and a little over three hundred yards **SW.** by **S.** from Tinker's Island. It is marked by a red spar-buoy (No. 2) placed in four fathoms on its southeastern side, which is to be left to the northward.

On the opposite side of this channel, and a little over a mile off, lies a group of bare rocks surrounded by shoal water, and known as Great Pig Rocks. The centre of the group bears **SW.** from Tinker's Island, one mile and three-eighths distant; **E.** by **S.** ½ **S.** from Phillips' Point, a mile and a half distant; and **NE.** by **E.** ¼ **E.** from Egg Rock Light-house, two miles and three-quarters distant. The rocky islet lying nearly a mile **N NW.** from these rocks is called **Ram Island,** and is half a mile from the shore. The Great Pig Rocks are not buoyed for this channel, as they are bold-to on the northern side and always show themselves. The red spar-buoys that will be seen on passing them are placed on the sunken ledges to the southward of the group and mark the southern channel into Swampscott.

Great Pig Rocks.

The Middle Ground.

Passing along the northern side of the Pig Rocks you will leave on the starboard hand a red spar-buoy. This is on the southern side of a sunken ledge, called The Middle Ground, which has five feet at low water, and lies half a mile **N NW.** from the Pig Rocks and about four hundred yards **S SE.** from Ram Island. The buoy (No. 4) is placed in sixteen feet on the southern side of the ledge.

When past The Middle Ground, there will be seen another red spar-buoy a little over a quarter of a mile **W.** from The Middle Ground buoy. This is on Sammy's Rock, which is

Sammy's Rock.

awash at lowest tides, and lies about six hundred yards **W.** ½ **N.** from The Middle Ground buoy; a quarter of a mile **SW.** by **S.** ½ **S.** from Ram Island; and about eleven hundred yards **NW.** ½ **N.** from Great Pig Rocks. The buoy is marked No. 6, and is placed in sixteen feet on the southern side of the rock, which has good water all around it.

When up with the buoy on Sammy's Rock another red spar-buoy will be seen about half a mile to the westward. This is on Dolphin Rock, another sunken ledge, with seven feet at mean low water, which lies five-eighths of a mile **NW.** by **W.** ½ **W.** from the Great Pig Rocks and

Dolphin Rock.

nearly a mile **E.** by **S.** from the eastern end of Phillips' Point. From Egg Rock Light-house it bears **NE.** ¼ **E.,** two miles and a half distant. This dangerous ledge obstructs both of the eastern channels into Swampscott, and is marked by a red spar-buoy (No. 10) placed near the rock in sixteen feet water. There is good water all around the ledge, but it is to be left to the northward.

Dread Ledge is a bare rock which lies about an eighth of a mile off the southwestern side of Phillips' Point. It is dry at low water, and there was formerly a beacon upon it con-

Dread Ledge.

sisting of a granite column surmounted by a staff and barrel painted red. This beacon having been destroyed, it has been replaced by an iron spindle twenty-four feet high with a red cask on top. Dread Ledge is often called *Half-Tide Rock;* and after passing it there are no dangers.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING NAHANT BAY OR SWAMPSCOTT HARBOR.

I. ***Coming from the Eastward, between Tinker's Island and Pig Rocks.***—With Marblehead Light-house bearing **N NW.,** a mile and five eighths off, and Egg Rock Light-house **SW.** by **W.** ½ **W.,** four miles and three-quarters distant, with between seven and eight fathoms, steer **W.** by **S.** ½ **S.,** leaving the Great Pig Rocks to the southward and Dread Ledge to the northward and carrying not less than five fathoms water. When abreast of the latter, with Egg Rock Light-house bearing **S.** by **W.** ½ **W.,** and you are in ten and a half fathoms, steer **NW.** ½ **W.** until abreast of the town, when anchor according to draught.

The above courses pass four hundred yards to the southward of The Roaring Bull; the same distance to the northward of Great Pig Rocks; a quarter of a mile to the southward of The Middle Ground; three-eighths of a mile to the southward of Sammy's Rock; four hundred yards to the southward of Dolphin Rock; and a quarter of a mile to the southward of Dread Ledge.

DANGERS

IN APPROACHING AND ENTERING NAHANT BAY OR SWAMPSCOTT HARBOR.

II. ***Coming from the Eastward, by the channel to the Southward of the Pig Rocks.***—In approaching Nahant Bay from the eastward, and intending to pass outside of the Great Pig Rocks, the first danger met with is The Outer Breakers, a dangerous sunken ledge, with eight feet water, which lies about five-eighths of a mile **E.** by **S.** ¾ **S.** from the dry Pig Rocks. From the southeastern point of Tinker's Island it bears **S.** by **W.** ¾ **W.**, one mile and a quarter distant, and from Egg Rock Light-house **E NE.**, three miles and an eighth distant. A red spar-buoy (No. 4) is placed off its eastern end in four fathoms water, and must be left to the northward by vessels using this channel. ***The Outer Breakers.***

When up with the buoy on The Outer Breakers two more red spar-buoys will be seen to the northward at the distances, respectively, of five-eighths and seven-eighths of a mile. The nearest is on Southern Shoal Rock, another of the outlying sunken ledges lying off the Great Pig Rocks. This ledge, which is awash at mean low water, lies about an eighth of a mile to the southeastward of the dry rocks; half a mile **W.** ¾ **N.** from The Outer Breakers, and a mile and a half **SW.** ½ **S.** from the southern end of Tinker's Island. The buoy, which is marked No. 6, is placed in four fathoms **S SE.** from the ledge. ***Southern Shoal Rock.***

The more distant red spar-buoy is on Southwest Breaker, another detached rock, which lies two hundred yards **SW.** ¼ **W.** from the dry rocks and a quarter of a mile **W.** ½ **N.** from Southern Shoal Rock. From Egg Rock Light-house this ledge bears **NE.** by **E.** ½ **E.**, two miles and a half, and from the beacon on Dread Ledge it bears **E.** ⅜ **S.**, one mile and three-quarters distant. It is awash at mean low water, and is marked by a red spar-buoy (No. 8) placed in twenty feet on the southwestern side of the ledge. ***Southwest Breaker.***

Dolphin Rock is the next danger met with, but is not in the way of vessels standing in through this channel with a fair wind. It lies **NW.** by **W.** ½ **W.** from the dry Pig Rocks, five-eighths of a mile distant, and is nearly a mile **E.** by **S.** from the eastern end of Phillips' Point. It has seven feet at mean low water, and is marked by a red spar-buoy (No. 10) placed in sixteen feet on its southwestern edge. (See also preceding page.) ***Dolphin Rock.***

Dread Ledge, the last obstruction met with in entering this harbor, is a ledge or rock bare at half-tide, lying about an eighth of a mile off the southwestern side of Phillips' Point. There was formerly a beacon upon it composed of a granite column surmounted by a staff and barrel. The beacon having been destroyed has been replaced by an iron spindle with staff and barrel on top, painted red. Dread Ledge is often called *Half-Tide Rock*. ***Dread Ledge.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING NAHANT BAY OR SWAMPSCOTT HARBOR.

II. ***Coming from the Eastward, by the channel to the Southward of the Pig Rocks.***—With Marblehead Light-house bearing **N NW.**, two miles and three-quarters distant, and Egg Rock Light-house **W.** by **S.** ¼ **S.**, with twenty-one fathoms water, steer for the latter, carrying not less than twelve fathoms water, until you are past the buoys on The Outer Breakers and Southern Shoal Rock and up with the dry Pig Rocks. Tinker's Island will now bear **NE.** by **N.** ½ **N.**, and there will be about thirteen fathoms. Then steer **W.** by **N.** ¼ **N.** two miles, with not less than ten fathoms, until you are abreast of Dread Ledge and Egg Rock Light-house bears **S.** by **W.** ¼ **W.**; when steer **NW.** ½ **W.**, and anchor off the village. *Or,* continue the course **W.** by **S.** ¼ **S.** for Egg Rock Light-house until you are within a quarter of a mile of the rock, when steer **N.** by **W.** ¾ **W.** to the anchorage.

Or, coming from Seaward, bring Baker's Island Light-houses to bear **N.** ½ **E.**, five miles and a quarter distant; Marblehead Light-house **NW.** by **N.** ¾ **N.**, four miles and a quarter distant; and Egg Rock Light-house **W.** ¼ **N.**, five miles and a quarter distant; when there will be twenty-two fathoms, dark grey sand and coarse gravel. Now steer **W.** by **N.** ¼ **N.**, and this course will lead safely, with not less than ten fathoms, up to Dread Ledge spindle. When abreast of it, with Egg Rock Light-house bearing **S.** by **W.** ¼ **W.**, and you are in ten and a half fathoms, steer **NW.** ½ **W.** to the anchorage off the village.

The above courses pass to the southward of all dangers, leaving The Outer Breakers half a mile; Southern Shoal Rock five-eighths of a mile; Southwest Breaker a little over half a mile; Dolphin Rock seven-eighths of a mile; and Dread Ledge a quarter of a mile distant.

III. ***Coming from the Southward and Westward, to enter Nahant Bay or Swampscott Harbor.***—Bring Egg Rock Light-house to bear **NW.** by **N.** ¾ **N.** and Long Island Light-house **SW.** by

W., with sixteen fathoms, coarse mud, and steer N. by W. ¾ W., which course will lead safely to the anchorage, passing a quarter of a mile to the eastward of Egg Rock Light-house in about ten fathoms water.

Vessels may anchor anywhere under the shore in Nahant Bay after passing Egg Rock, and will have from two to five fathoms.

LIGHT-HOUSE.

Name.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Egg Rock Light-house	42 25 58	70 53 52	4 43 35.5	Fixed red.	87	12

TIDES.

The tidal observations are referred to Boston Light-house.

Corrected Establishment	11h 12m
Mean Rise and Fall of tides	9.3 ft.
Mean Rise and Fall of Spring tides	10.9 ft.
Mean Rise and Fall of Neap tides	8.1 ft.
Mean duration of Rise	6h 20m
Mean duration of Fall	6h 6m
Mean duration of Stand	0h 11m

VARIATION OF THE COMPASS.

The variation of the magnetic needle at Little Nahant for 1879 is 11° 26′ W., the annual increase being about 3.5′.

LIFE-SAVING STATIONS.

Under the auspices of the Massachusetts Humane Society, a life-boat and carriage have been placed at Phillips' Beach. At East Point, near the hotel on Nahant, another boat has been placed in a position handy to launch on either side of the peninsula.

BOSTON BAY

is the western end of Massachusetts Bay included between Nahant and Minot's Ledge; and from it lead the channels into Lynn and Boston harbors. The bay is eleven miles wide between Minot's Ledge and Nahant, and makes about four miles into the land. It is studded with islands and full of shoals and ledges. The northwestern part of this bay is known as Broad Sound, the entrance to which is contained between Deer Island and Nahant. The rest of the bay forms the approaches to Boston Harbor and the smaller harbors in that vicinity.

Broad Sound.

Broad Sound lies NW. and SE., is about five miles wide between Deer Island and Nahant, and nearly three miles and a half long. At the head of the Sound is Lynn Harbor, the entrance to which is contained between Bass Point (on Nahant) and Chelsea Beach. On the east, Broad Sound is separated from Nahant Bay by Lynn Beach, Little Nahant and Nahant; and its northern shores are occupied by the city of Lynn, one of the great manufacturing towns of New England. On the west, the boundaries are the famous **Chelsea Beach**, which, beginning at **Pines Point**, three-quarters of a mile to the southwestward of Lynn, runs in a SW. direction for nearly three miles, and is not quite a hundred yards wide. The land behind it is salt-meadow, into which the firm ground extends like spurs; and here and there over the surface of this marsh appear groves of oak and pine trees, which will distinguish this part of the Sound from other parts of the bay when viewed from seaward.

At Pines Point Chelsea Beach is a hundred yards wide; but back of the shore is a meadow, and behind that a grove of pine trees, which give the name to the point. This point is on the southern side of the entrance to **Chelsea Creek** and **Saugus River**,—both of which are shallow estuaries.

The settlement called **Centre Village** occupies the high land back of the southern end of Chelsea Beach, but is of little importance.

Deer Island.

Deer Island, which separates the entrance to Broad Sound from Boston Harbor, lies NNW. and SSE., is nearly a mile long, and a third of a mile wide at its widest part. To a vessel approaching from the northeastward it will appear as a long bare island with a gently sloping green hill, having a flag-staff on its summit towards its eastern end; and this hill appears joined to another to the westward, which has a precipitous descent to seaward. The House of Correction, with its high cupola, appears on the western end of the island. On the eastern side of the hill, in the centre of the island, is a life-boat station, established by the Massachusetts Humane Society. Both the northern and southern ends of Deer Island are low and covered with grass only, and there are no trees except those planted for ornamental

purposes. On the north a channel eighty yards wide separates Deer Island from a low sandy point of the mainland, called Point Shirley. This passage is known as **Shirley Gut**, and is commonly used by the steamers plying between Boston and Nahant.

Point Shirley is the southwestern extremity of a very long and narrow peninsula, mostly sand-beach, which extends in a **S. ½ W.** direction from the mainland to the southward of Chelsea Beach. The point itself forms a sort of flat head to this peninsula, lies **NW.** and **SE.**, and is half a mile long and about a fifth of a mile (three hundred and seventy-five yards) wide. The city Almshouse and other public buildings are situated on this point. **Point Shirley.**

Winthrop's Head is a precipitous headland, a hundred feet high and bare of trees, situated half a mile **N NE.** from Point Shirley and on the western side of the entrance to Broad Sound. The road from Point Shirley to Centre Village leads around the western side of this hill. To the northward of this head runs a sand-beach an eighth of a mile wide and half a mile long to the mainland, about a mile to the southward of Grover's Cliff, which **Grover's Cliff.** is the most prominent point between Point Allerton and Nahant Head, and lies one and a fifth miles **N.** by **E.** from Winthrop's Head. It is backed entirely by marsh, but the point itself is a precipitous headland eighty feet high and bare of trees.

From Grover's Cliff the shore-line runs about **N. ½ W.** for three-quarters of a mile to the southern extremity of Chelsea Beach; and midway between this point and Grover's Cliff is a hill a hundred feet high. The whole shore is bare of trees, but the hills are usually grassy and in some places under cultivation. The summit of the **Breed's Island.** hill on the western end of Breed's Island appears, when viewed from the eastward, over the sand-beach and marsh which separate Grover's Cliff from the hills to the northward. The summit of this island is a hundred and fifty feet above the sea, and there are some few scattered trees near the base of the hill on the eastern side, but it is for the most part treeless and under cultivation.

To the northward of Breed's Island will appear **Powderhorn Mountain**, a hundred and eighty feet high, and the houses in the village of **Winnissimmet** will show over the low shore between the two hills.

LYNN HARBOR.

On the northern side of Broad Sound are situated the harbor and city of Lynn. The land is low and marshy from the northern bank of Saugus River nearly across the head of the harbor, and it is also much cut up by coves and slues penetrating the marshes in every direction. In the northeastern corner of the head of the harbor the line of marsh is narrow, and the wharves of the town extend over this marsh to the water's edge. In process of time, no doubt, all of the meadow-land will be in like manner reclaimed and the town will extend to the edge of the shore.

Lynn is chiefly celebrated for its shoe factories. The railroads have, however, all of the transportation, and the harbor is very little used.

The entrance to Lynn Harbor is between Chelsea Beach on the west and Bass Point, the western point of Nahant, on the east. It is two miles wide, but is so full of rocks and shoals as to leave only very narrow and shallow channels of approach, available only for light-draught vessels. The eastern shores are formed by Lynn Beach, (see page 567,) the peninsula of Little Nahant and Nahant.

Bass Point, the southwestern point of Nahant, is quite low, but high land is seen behind it. From **Bass Point.** this point the shore-line runs **N. ½ E.** for a third of a mile to the **West Cliffs**, which, as their name implies, show an abrupt and precipitous face to the westward and are bare of trees.

A quarter of a mile **N. ½ E.** from West Cliffs is the northwestern end of Nahant, called Black Rock Point. The shore is low at this point, with high land behind it to the eastward. Six hundred yards (a third of a mile) **NE. ½ N.** from this point begins **Little Nahant Beach. Little Nahant** appears to the northward of the beach, and is **Black Rock Point.** half a mile above Black Rock Point; and presents, when viewed from the southward and westward, a regular and gradual slope from the water's edge to a height of from eighty to ninety feet. The road to Lynn winds along the beach at its foot.

Lynn Beach (already described, page 567) forms the rest of the eastern shore of the harbor, extending from Little Nahant to the mainland, a distance of a mile and a quarter.

The city of **Lynn**, which occupies the northern shore of the harbor, is of little commercial importance,—shoe manufacturing absorbing all the time and energies of the inhabitants. On the south and southwest the town is bounded by extensive salt-marshes which occupy the shore for distances varying from a quarter of a mile to a mile and a quarter back from the shore-line; but the settlements have gradually encroached upon this extensive tract, and would, no doubt, have long ago reclaimed it but for the revenue yielded by the crops of salt hay cut from it and the fact that there is not sufficient commerce or coastwise trade to make it necessary.

On the southwest these marshes extend to Saugus River, which empties into Lynn Harbor between **Saugus River.** **Tree Point** (sometimes called **Bow Point**) on the north and **Pines Point** on the south. The entrance to this river is a quarter of a mile wide, but the channel is very narrow, and the best water is close under Pines Point. Four feet at mean low water may be carried up to the bridge of the Eastern Railroad.

Bayley's Hill, which is a prominent landmark for Nahant Harbor, is a bluff steep head, about sixty or seventy feet high, situated on the southern side of Nahant, five hundred yards **E.** from Bass Point, and is bare of trees. It lies on the western side of **Nahant Harbor**, so-called.

DANGERS

IN APPROACHING AND ENTERING LYNN HARBOR.

In approaching from the eastward the first danger met with lies off the southwestern end of Nahant, and is known as the Shag Rocks, a group of dry rocks, situated about three hundred yards **S SW.** from East Point and about two hundred yards from the nearest shore. There is from three to five fathoms water inside of them, but they are not buoyed.

Shag Rocks.

If bound to Nahant, round Shag Rocks and steer to the northwestward, passing to the southward and westward of a bare rocky islet, called **Pea Island,** which lies off the southwestern end of Nahant. It is a hundred and fifty yards from shore and is quite bold-to on its western side; but there is no passage between it and the shore of Nahant.

Joe Beach's Ledge.

When up with Pea Island there will be seen ahead a black spar-buoy, about three hundred yards from the shore. This is on Joe Beach's Ledge, a sunken rock, with five feet at mean low water, which lies three hundred and fifty yards **W.** by **N.** ¼ **N.** from Pea Island. The buoy (No. 1) is placed in three fathoms close to the ledge, and must be left to the westward if bound into Nahant, but is not in the way of vessels bound to Lynn.

Vessels bound to Lynn should, when past Shag Rocks, steer to the westward; and ahead will be seen a red spindle nearly in range with Bass Point. This is on Bass Rock, or *Old Sunken Rock,* as it is sometimes called,—a dangerous ledge lying six hundred yards **SE.** by **S.** ½ **S.** from Bayley's Hill; half a mile **SE.** by **E.** ⅛ **E.** from Bass Point; and two-thirds of a mile **W.** ½ **N.** from the Shag Rocks. It has only a few feet on it at high water and is bare at half-tide. An iron spindle, painted red, with cage on top, is placed on the western end of the ledge, and must be left to the northward.

Bass Rock.

Bayley's Ledge, which is not in the way of vessels standing in with a fair wind, makes out from Bayley's Hill in a **S.** by **W.** direction for nearly two hundred yards, has only two feet at mean low water and is not buoyed. Vessels beating to windward must, in standing to the northward, give Bayley's Hill a berth of three hundred and fifty yards to avoid being set on to this ledge.

Bayley's Ledge.

After passing Bayley's Hill there are no dangers until Bass Point is rounded, when the channel turns to the northwestward towards Saugus River, or to the northward towards Lynn. Here the first obstruction met with is on the eastern side of the channel, and is known as Old Harry Rock, (part of which is dry at low water,) making out from the West Cliffs nearly five hundred yards. It bears **N NW.** from Bass Point, distant half a mile, and is to be left to the eastward. When abreast of it you will leave to the westward a red buoy, placed on the southwestern side of Lobster Rocks as a guide for vessels bound into Saugus River. The easternmost of the two Lynn channels leads between Old Harry Rock and this buoy and along the edge of the flats which make off from Little Nahant.

Old Harry Rock.

Lobster Rocks (awash at mean low water and bare at low spring tides) are a number of rocks surrounded by extensive shoals which form a serious obstruction to the channel, confining it within very narrow boundaries indeed. It is not safe for vessels to pass beyond Old Harry Rock without a pilot, as the channel is narrow, winding and shoal. A black spar-buoy was formerly placed on the eastern side of these rocks as a guide to this channel, but it has been removed, as the western channel is now considered the best. The red buoy, which is marked No. 2, is placed in twelve feet to the southwestward of the rocks.

Lobster Rocks.

Bound in by the Western Channel, you will leave the red spar-buoy on the southwestern side of Lobster Rocks to the northward, and round it,—steering a little to the northward of a black spar-buoy which will be seen about six hundred yards to the northwestward. This is on White Rocks, (sometimes called *Western Rocks,*) a number of rocks awash at mean low water, which lie nearly in the middle of the entrance, at the junction of the western channel into Lynn and the channel leading into Saugus River. The buoy has two prongs, is marked No. 1, placed in two fathoms on the southern side of the rocks, and must be left to the westward.

White Rocks.

After passing the buoy on White Rocks the channel turns to the northward and eastward towards a red spar-buoy about half a mile ahead. This is on the Black Rocks, which are awash at extreme low tides and lie at the junction of the eastern and western channels, on the extreme northern point of *Lobster Rock Flats,* which extend from Lobster Rocks to this point. Vessels entering by the western channel leave this buoy to the eastward, while those entering by the east channel leave it to the westward as though it were painted black. It bears **NE.** ½ **E.** from White Rocks buoy and **W.** by **S.** ½ **S.** from Little Nahant, is marked No. 4, and is placed in twelve feet just to the northward of the rocks.

Black Rocks.

Half a mile to the northward of the Black Rocks buoy is a long shoal making off in a southerly direction from the northeastern point of the extensive dry flat which separates the Lynn channel from the entrance to Saugus River, and called Forked Point Shoal. When up with Black Rocks buoy there will be seen the black spar-buoy (No. 3) on the southeastern point of this shoal, about half a mile to the northeastward. The course leads directly towards

Forked Point Shoal.

it, leaving it to the westward, close-to; and about four hundred yards N. by E. ½ E. another black spar-buoy (No. 5) will be seen close in with Lynn Beach. This buoy is on the eastern side of the flats and marks what is called the **Black Marsh Channel**, which leads to the wharf-line of the town, but is extremely narrow and very shoal. The buoy is painted black to signify that it must be left to the westward, but it is in reality in the best water in the channel (eleven feet) and may be passed close-to. The channel sweeps around this buoy to the northward.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING LYNN HARBOR.

I. ***Coming from the Eastward.***—Strangers must not attempt to enter Lynn Harbor without a pilot,—the channels being too narrow and crooked for safe navigation. About six feet at mean low water may be taken through the western channel as far up as Forked Point Shoal; but vessels of heavy draught must make an anchorage at Nahant. In northerly winds it is usual to enter Boston Harbor and anchor in President's Roads. As the mean rise and fall of tide at this place is over nine feet, it is possible at high water for a vessel drawing twelve feet to go up as high as Forked Point Shoal; but only ten feet at high water can be taken up to the town. An inspection of the chart of Lynn Harbor will best show the difficulties to be encountered, but the following directions guide to the best water in both channels:

To enter Lynn Harbor by the Eastern Channel.—When up with the southern end of Nahant give it a berth to the northward and westward of nearly half a mile to avoid the Shag Rocks, and steer W. by S. ¾ S., carrying not less than thirteen fathoms, until Bayley's Hill bears NW. ¼ N., the Hotel on Nahant NE. by N. ½ N., or Boston Light-house S. There will be at this point about thirteen fathoms. Then steer W NW., carrying not less than five and a half fathoms, until Bass Point bears NE. by E. ½ E., when steer N. ¼ E. until you are past Old Harry Rock and Black Rock Point bears E. by N. ½ N. On this course there is nine feet. Now steer for the point until within two hundred yards of it, and you are in thirteen feet at low water; but above this it is not safe to go without a pilot,—the channel being extremely narrow and crooked. The course from abreast of Black Rock Point (two hundred yards off) is N. ¼ E. until the red buoy on the Black Rocks bears NW. Steer nearly for the buoy, keeping it open a little to the westward, and when past it, NE. by N. ¼ N. will lead up to Forked Point Shoal buoy. (This channel is now seldom used, having become shoaler of late years and remaining quite crooked.)

To enter Lynn Harbor by the Western Channel.—Steer W. by S. ¾ S. past Nahant, as before, and when Bayley's Hill bears NW. ¼ N., the hotel on Nahant NE. by N. ½ N., and Boston Light-house S., with thirteen fathoms water, steer W NW. until Bass Point bears NE. by E. ½ E. and Grover's Cliff SW. ½ W. Five and a half fathoms will be found at this point. Then steer N. by W. ½ W., nearly for the black spar-buoy on the White Rocks, carrying not less than eight feet water, and when within one hundred yards of it steer NE. ¼ E., passing one hundred yards to the westward of the red buoy on Black Rocks. Continue the course until this buoy bears S., when steer NE. by N. ¼ N. until you are up with Forked Point Shoal buoy, and then N. by E. ½ E. for the black buoy in Black Marsh Channel. Beyond this no directions can be given.

To enter Nahant Harbor.—Pass Nahant at the distance of five hundred yards on a SW. by W. course, with twelve fathoms, and continue this course with no less water until Shag Rocks are nearly abeam and the Ocean House (on Nahant) bears N. ½ E. and there is thirteen fathoms. Now steer NW. by W. ¼ W. for Bayley's Hill, carrying not less than three and a half fathoms, until Pea Island and the Ocean House are in range on a bearing of NE. ¾ E. Now steer N. ½ W., passing a little more than one hundred yards to the eastward of Joe Beach's Ledge, and anchor in from one to two fathoms, between Bass Rock and the steamboat pier.

Vessels using the eastern channel into Lynn pass a quarter of a mile to the southward of Shag Rocks; three hundred yards to the southward of Bass Rock; two hundred yards to the westward of Old Harry Rock; and three hundred yards to the eastward of the red buoy on Lobster Rocks. Those using the western channel pass an eighth of a mile to the westward of the red buoy on Lobster Rocks; one hundred yards to the eastward of White Rocks buoy; close to Forked Point Shoal buoy, and one hundred yards to the eastward of Black Rocks buoy.

Sailing Directions---Lynn Harbor. Vessels bound to Nahant pass first about three hundred and fifty yards to the eastward, and then one hundred and fifty yards to the southward, of Shag Rocks; about two hundred yards to the southward of Pea Island; and a little more than a hundred yards to the eastward of Joe Beach's Ledge.

II. ***Coming from Boston, through Broad Sound.***—When clear of the shoals off the entrance to Boston, with four and a half fathoms, hard bottom, and Long Island Light-house bears **SW.** by **W.** ½ **W.**, two miles and a half off, Winthrop's Head **NW.** by **W.** ½ **W.**, and Narrows Light-house **S.** by **W.** ½ **W.**, steer **N.** by **W.** ¼ **W.** towards Pines Point. On this course there is nothing less than five fathoms water. When the southern end of Bass Point bears **E.** ¾ **S.** and the eastern extremity of Pines Point **N.** ¼ **W.**, there will be four fathoms at low water. Now steer **N.** ¾ **E.** until you are abreast of the black buoy off White Rocks, which leave to the westward about eighty yards off. Now steer **NE.** ¼ **E.**, and follow the directions given above for entering the eastern channel.

III. ***Coming from the Southward, to enter Saugus River.***—When Pines Point bears **N.** ¼ **W.** and Bass Point **E.** ¾ **S.**, as above, steer for the former, leaving the White Rocks to the eastward one hundred and fifty yards. Continue this course (crossing the bar in four feet mean low water) until the hotel just to the southward of Pines Point bears **NW.** by **W.** A black spar-buoy (No. 3) will then be abeam, and another one (No. 5) about three hundred and fifty yards ahead. Pass to the eastward of these buoys and steer **NE.** by **E.** ½ **E.** until Pines Point bears **NW.** ½ **N.**, three hundred yards off; when steer **NW.** by **N.** ¾ **N.**, three hundred and fifty yards, (one-fifth of a mile,) until you are up with black buoy No. 7, and the extremity of the point is exactly abeam and about one hundred yards off. Now, being in the mouth of the river, steer **NW.** by **W.** ¼ **W.** until the southern end of Tree Point bears **NE.** ¾ **E.**, passing to the southward of the red buoy on *Round Rock*. From this point the course up is **W.** by **N.** ½ **N.** until you are abreast of the entrance to **Chelsea Creek** and the draw in the railroad bridge bears **N NW.**, when steer for the draw. Above this no directions can be given, nor should strangers attempt to enter this river without a pilot.

BOSTON HARBOR.

This harbor is situated at the western end of Boston Bay and includes the subordinate ports of Neponset, Weymouth, Hingham, Cambridge and Charlestown. Its entrance lies between Deer Island on the north and Point Allerton on the south, and is three miles and three-quarters wide. The geographical position of the entrance to the Main Ship Channel is

Latitude ..... **42° 19′ 18″ N.**
Longitude ..... **70° 50′ 0″ W.,**

from which position the distance in a straight line to the city of Boston is six miles and three-quarters The space between Point Allerton and Deer Island is full of islands, through and among which lead the several channels into Boston Harbor. Of these there are six in common use, viz: The Broad Sound Channels, called, respectively, the North and South channels; Hypocrite Channel; Black Rock Channel; Main Ship Channel; and Back or Western Way,—the Hypocrite Channel and the Back Way being used only by vessels bound out. The Main Ship Channel will be the first described.

Channels in Boston Harbor.

MAIN SHIP CHANNEL.

The entrance to this channel is between Light-house Island on the north and Point Allerton on the south, and is a mile and an eighth wide. This width it holds for a little over a mile and a quarter, when it contracts at The Narrows to a little more than a quarter of a mile. The course is first about **W.** for a mile and an eighth; then **NW.** through The Narrows, between Narrows Light-house (on Spit Bar) and George's Island, (on which Fort Warren is built;) then **NW.** by **N.** between Lovell's Island and Gallup's Island for three-quarters of a mile, until up with Nix's Mate Beacon; then **NW.** towards Deer Island, joining the Broad Sound Channels; then **W.** ½ **N.** through President's Roads, passing to the southward of Deer Island and to the northward of Long Island and the Spectacle Islands; and then between **NW.** ½ **N.** and **NW.** by **W.** up to the city, passing between Governor's Island on the north and Castle Island on the south. The whole distance by this channel from the entrance to the anchorage off the city is seven and a half nautical miles.

On approaching the main entrance to Boston from the northward or eastward the first prominent object met with will be the Outer Brewster, a bare rocky island,—the easternmost of the group lying on the northern side of the Main Ship Channel. The Outer Brewster is a mass of black rock, presenting a very rugged appearance and destitute of all vegetation. It lies **E.** and **W.**, is about a third of a mile long, sixty feet high at its highest part, and its shores are bold-to; but there are outlying reefs to the eastward of it. There is a solitary house on the northern side. About three hundred yards to the westward of Outer Brewster lies Middle Brewster, separated from the former by a narrow and dangerous passage called **The Flying Place**, which is full of shoals and unfit for strangers. Middle Brewster lies **E.** and **W.**, and is a third of a mile long and about fifty feet high. It is a mass of bare rock, destitute of vegetation,

Outer and Middle Brewsters.

but presenting a somewhat less rugged appearance than that of the Outer Brewster. A spit or reef makes out in a **SW.** direction from its western end, and a similar bar extends in a **NE.** direction from the Great Brewster, nearly meeting the former, and leaving a very shallow passage, a hundred and fifty yards wide and full of shoals, between the two bars. It is only available at high water, and then only by those well acquainted with the dangers.

Shag or Egg Rocks.

When nearly up with the Outer Brewster, and bound in by the Main Ship Channel, there will be seen to the southward of that island and to the eastward of Boston Light-house a group of bare rocky islets stretching in an **E.** and **W.** direction. These are the Shag or Egg Rocks, lying on the northern side of the entrance to the Main Ship Channel, half a mile to the southward of the Brewsters and the same distance to the eastward of Boston Light-house. The rocks are from twenty to twenty-five feet above high water, extend **E.** and **W.** for a third of a mile, (six hundred and fifty yards,) and are pretty bold-to.

Boston Light-house.

Three hundred yards **W.** of the western end of the Egg Rocks, and on the northern side of the entrance, will be seen a low rocky islet of irregular shape, upon which stands a large light-tower with its accompanying dwelling-house and bell-tower. This is **Light-house Island,** (sometimes called **Little Brewster Island,**) and the tower is called Boston Light-house. It is a circular tower of rough stone, eighty feet high, with a black lantern on top, from which is shown a revolving white light, of the second order of Fresnel, from a height of one hundred and eleven feet above the sea. The flashes are at intervals of half a minute, and the light is visible in ordinary weather seventeen miles. Connected with the light-house is an **air-trumpet** for foggy weather, giving blasts seven seconds long at intervals of forty-three seconds. The geographical position of the light-house is

Latitude.....42° 19′ 39″ N.
Longitude.....70° 53′ 25″ W.

The bearings and distances of Boston Light-house are as follows: From

	Miles.
Great Brewster, (highest point,) S SE......nearly	½
Centre of Middle Brewster, S. by W. ½ W......	⅝
Eastern point of Outer Brewster, SW. ½ W......	1⅛
Point Allerton, N. ¾ W......	1⅛
Martin's Ledge, (red nun-buoy,) SW. by W. ¾ W......	1¾
Whistling Buoy on Northeast Grave, SW. ¾ S......	2¾
Boston Ledge, (red nun-buoy,) W. ¾ S......	1¼
Bell-buoy on Harding's Ledge, NW. ½ W......	2⅝
Minot's Ledge Light-house, NW. ½ W......	6¾

Great Brewster.

About eight hundred yards **N NW.** of Light-house Island (with which it is connected by a long bar or sand spit, bare at low water) lies a very peculiar-looking island, about one hundred feet high and presenting a precipitous face to seaward, called the Great Brewster. Its very remarkable shape renders it a landmark not to be mistaken, but this shape can be more readily explained by a reference to the view of the main entrance. This island lies nearly **NE.** and **SW.** and is three-eighths of a mile long. Its northern point is high and steep, and the land gradually rises towards the southward, attaining its greatest height about half-way between the northern and southern points. It then descends regularly almost to a level with the water, and again rises with an equal regularity to the southern point, which is nearly as high as the northern end. The whole of this sea-face is a precipitous water-worn cliff, and the summit is smooth and grassy but bare of trees.

From the southwestern end of the Great Brewster a long dry sand-spit or bar extends to the westward for three-quarters of a mile to The Narrows, and is called **Spit Bar** or **Brewster Bar.**

Point Allerton.

Point Allerton, on the southern side of the entrance to the Main Ship Channel, is a very conspicuous headland. It is a bare hill one hundred and fifteen feet high, presenting a steep, water-worn cliff-like face to the eastward. Its northern point being separated from the main hill by low land (as in the case of the Great Brewster) gives a very peculiar appearance to the head. (See view of main entrance.) The summit of Point Allerton is grassy but bare of trees, and the sea-face is protected by a wall of granite. It presents an appearance exactly similar to the Great Brewster, (except that the northern end of the point is the lower,) and its highest point is about midway between its northern and southern ends. They appear as if they had once been joined together and afterwards separated by some violent convulsion of nature. There is a life-boat station in the valley between the northern point and the high cliff to the southward, and a hut of refuge on the beach, three hundred and twenty-five yards from the base of the hill,—whence the road leads to Hull and Nantasket.

Nantasket Beach.

Point Allerton is the northern end of Nantasket Beach,—a strip of sand-beach two miles and three-quarters long, extending in a **N NW.** and **S SE.** direction, and separating the large shoal bay, called **Hingham Bay,** from the ocean. There are several hills on this beach, all of them bare of trees; and another life-boat station three-quarters of a mile below the hut of refuge, at the base of a very prominent hill called **Strawberry Hill.**

At Point Allerton the southern shores of the main entrance turn abruptly to the westward. A narrow strip of beach, known as **Stony Beach,** half a mile long and forty yards wide, connects the western end of the hill with the high land of Hull and Nantasket. This land is formed by two or three regularly sloping hills from one hundred to one hundred and twenty-five feet

Nantasket Hills. high and covered only with grass, called Nantasket Hills. On the highest (which is distinguished from the others by being called simply **Nantasket Hill**) there is an ancient earth-work of considerable size, and the remains of a redoubt may be discerned on the summit of the other. The lower hills present perpendicular cliff-like faces on their northern sides, and it is proposed to protect these by a granite sea-wall such as that which protects Point Allerton.

The villages of **Hull** and **Nantasket** are built on the southwestern sides of these hills, and from seaward parts of them may be seen; but after entering the harbor the hills hide all but one or two of the highest steeples until you are to the westward of the cliffs and are approaching Nantasket Gut, when the villages will appear over the low land.

Narrows Light-house. On the northern side of the channel, to the westward of Great Brewster, as before mentioned, lies Spit or Brewster Bar; and on the western extremity of this bar will be seen an iron screw-pile light-house, called Narrows Light house. It shows a fixed red light, of the fifth order of Fresnel, from a height of forty-six feet above the sea, visible twelve miles. The light-house is painted brown, and its geographical position is

Latitude.....42° 19′ 21″ N.
Longitude.....70° 55′ 10″ W.

False Spit. Spit Bar, about three hundred yards E. of Narrows Light-house, sends off an arm in a southeasterly direction for an eighth of a mile, on the end of which is built a granite beacon surmounted by an iron spindle and cage—all painted red. This arm is False Spit, and the beacon is **False Spit Beacon**. In coming up the Main Ship Channel, when abreast of this beacon you should haul up to the northwestward to pass through **The Narrows**. This course leaves Narrows Light-house to the eastward, and a low island, entirely occupied by a granite fort, to the westward. This island is George's Island, and the fort is **Fort Warren**. The island lies N. by W. and S. by E., is three hundred and fifty yards wide and a little over six hundred long, and is altogether occupied by the fort, which is a casemated granite work, surmounted by traverses of earth and faced by earth-work water-batteries. The citadel or central house of the fort, which appears above the parapet when you approach it closely, is a mile and three-eighths **SE. ¼ E.** from Long Island Light-house; a mile and three-quarters **W. ¼ S.** from Boston Light-house; a little over two miles **NW.** by **W. ¼ W.** from Point Allerton; and a mile and three-eighths **NW. ¼ N.** from Nantasket Hill. Boston is six miles (by the channel) above Fort Warren.

George's Island.

The **Black Rock Channel** here opens to the northeastward, between Narrows Light-house and Lovell's Island. This island lies on the eastern side of The Narrows, a quarter of a mile to the northwestward of Narrows Light-house and the same distance to the northeastward of Fort Warren. It is very irregular in shape, and not over thirty or forty feet high in its highest part, which is near the centre. Its length is a little over half a mile and its width varies from two hundred and fifty yards (at its southern end) to five hundred, (near the middle.) Lovell's Island lies **NW.** and **SE.**, and is bold-to on its southwestern side; but its eastern and northern shores are obstructed by long ledges and extensive flats. There are two or three houses on the western shore, near the northern end of the island. The scheme of the Harbor Commissioners contemplated the cutting away of a portion of the western face of Lovell's Island, where it is widest, for the purpose of straightening and widening the channel at this point; and this work has been done by the U. S. Engineers,—it being intended to obtain a depth of twenty-three feet at mean low water throughout a width of two hundred yards.

Lovell's Island.

On the western side of the channel, and directly opposite Lovell's Island, is Gallup's Island, narrow and bare of trees, and with a somewhat precipitous face on its northern side. It lies nearly **E.** and **W.**, is over eight hundred yards long, and not quite three hundred wide near its western end, where it is widest. Its eastern end is a low, narrow sand point. The cliff and sea-face of this island are protected from the action of the water by a granite sea-wall nearly a mile long, built under the direction of the State Harbor Commissioners, and completed in 1871. There is a group of houses and a wharf on the southern side of the island, but they are not visible from The Narrows.

Gallup's Island.

From the western end of Gallup's Island shoal water extends in a northerly direction for three-eighths of a mile, and is called Nix's Mate. On this is built a large black beacon, called **Nix's Mate Beacon**, which will be seen a little open to the westward when passing between Lovell's and Gallup's islands. It is composed of a square granite base, surmounted by a pyramidal wooden structure painted black,—marking the centre of Nix's Mate and the junction of the Main with the Broad Sound Channels.

Nix's Mate.

When nearly up with Nix's Mate Beacon the course is **NW.** for another pyramidal granite beacon, painted red, which is on the northern side of the Broad Sound Channels, and is called **Deer Island Point Beacon**. It is built on the extreme southern point of Deer Island, which is covered at one-third flood.

The large island a little open to the eastward, which shows as a bare, green, smoothly sloping hill, somewhat broken at its western end by water-worn cliffs, is Deer Island. The wharf at Point Shirley and some of the houses on that point are just visible to the westward of the cliffs, and a part of the city Almshouse just over them. Deer Island lies **N NW.** and **S SE.**, is nearly a mile long, and at its widest part one-third of a mile wide. Both ends of the island are low, and there are no trees except a few planted for ornamental purposes. The **Houses of Correction** and **Hospitals** occupy the western slopes of the hill, near the northern end of the island.

Deer Island.

A channel eighty yards wide separates the northern end of Deer Island from **Point Shirley**,—a low sandy point of the mainland. This channel is called **Shirley Gut**, and is sometimes used by steamers plying between Boston and Nahant.



Entrance to Boston Harbor by the Main Channel, Boston Lt. Ho. bearing W. N. W. distant 5 Miles.



Entrance to Boston Harbor by the South Channel, Long Id. Lt. Ho. bearing S. W. by W. ½ W. distant 5¼ Miles.



Coast between Cohasset Entrance and Scituate Harbor, Minot Ledge Lt. Ho. bearing S. by E. distant 2¾ Miles.

On coming abreast of Nix's Mate, Deer Island Point Beacon will come in range with a low island about two miles and a half off, and having several large spreading trees upon it. This is Apple Island, which is circular in shape, of moderate height, and about an eighth of a mile in diameter. It lies midway between Point Shirley and Governor's Island and is surrounded by flats. The range of this island and Deer Island Point Beacon is one of the Main Ship Channel marks. **Apple Island.**

After passing Nix's Mate the channel turns to the westward between Deer Island Point Beacon on the north and a high precipitous head, with a light-house on it, on the south. This head, which shows a steep water-worn cliff to the northward and eastward, is called **Long Island Point,** or **Long Island Head,** and is the northernmost point of Long Island, which lies on the southern side of the Main Ship Channel, and is about a mile and a half long and from one hundred and fifty to six hundred yards wide. It extends in a **NE.** and **SW.** direction, with an undulating surface, and is bare of trees except some ornamental groups in the neighborhood of the hotel and light-house. From the middle of the channel, after passing Nix's Mate, this island will appear as a round hill about eighty feet high, with perpendicular faces,—in other words, only Long Island Head will show, the rest of the island being hidden by it. On the summit appear the light-house and keeper's dwelling, and the tops of the hotel buildings show over the hill. The light-house on the head is an iron tower, painted white and twenty-seven feet high, showing a fixed white light, of the fourth order of Fresnel, from a height of one hundred and twenty-one feet above the sea, visible sixteen miles. The geographical position of this light-house is **Long Island and Light-house.**

Latitude ..... **42° 19′ 46″ N.**
Longitude ..... **70° 57′ 23″ W.,**

and it bears from

	Miles.
Boston State House, SE. by E. ½ E.	5
Fort Independence, E SE.	2¼
Spectacle Islands, (summit of northern island,) E. ½ S.	1⅝
Bunker Hill Monument, SE. ½ E.	5⅝
Deer Island Point Beacon, S. by W. ½ W.	nearly ⅝

Seen from the southward and eastward, Long Island presents quite a different appearance from that just described. Its full length and undulating surface is then seen, and will be described in its proper place. On passing the head a granite sea-wall will be seen facing it. This wall is of great strength, and is twenty-one hundred feet in length.

Passing Long Island Head, the channel continues to the westward through what is called President's Roads; and to the southward of the course will appear two islands of moderate height, with perpendicular faces, and lying **N.** and **S.** of each other. These are the Spectacle Islands, or **The Spectacles,** as they are commonly called, which lie close together, and at low water are joined by a dry sand-bar. The northern island lies nearly **E.** and **W.,** is seven hundred yards long and sixty-five feet high, with cliff-like faces, worn by the action of the water. A group of houses is built near the southern end, where there is a low sand point. The southern island is nearly square,—being about four hundred and fifty yards in diameter. It is sixty-five feet high at its highest point, and, like the northern island, its faces are precipitous except on the southern side, where the shore is low and sandy. **Spectacle Islands.**

The Spectacles lie on the eastern side of the entrance to Back or Western Way; and there is a passage between them and Long Island, which is often used by coasters, but is unsafe for strangers. The water is shoal around these islands except on their northern side.

When past The Spectacles, on the way through President's Roads, a large island, presenting a precipitous face to the northward and having a group of large houses on its summit, will open to the westward of them. This is Thompson's Island, which lies off the entrance to Neponset River and on the western side of the entrance to Back or Western Bay, extends **E NE.** and **W SW.,** and is a mile long. The group of buildings visible on its highest point, surrounded by ornamental grounds, is the **Farm School,** and occupies the middle of the island, where the land rises to a height of seventy-five feet. It is this group of buildings that is seen from the Main Ship Channel, showing between The Spectacles. Nearly all the rest of the island is low land, and it is surrounded by flats and shoals. On its southern side it is nearly joined to the mainland by a long narrow sand-spit of curious shape, which extends off in a **S.** by **E.** ½ **E.** direction for five hundred yards,—its southern end being within seventy-five yards of the peninsula of Squantum. The School on Thompson's Island bears from **Thompson's Island.**

	Miles.
Boston State House, SE. ⅞ S.	nearly 3¼
Dorchester Point, SE. by S. ½ S.	1⅛
Fort Independence, S. ½ W.	1¼
Spectacle Islands, (summit of northern island,) W SW.	1

When fairly past The Spectacles the channel turns to the northwestward and passes between Governor's Island on the north and Castle Island on the south. Castle Island, easily recognized by **Fort Independence,** (which is built upon it,) is a small low island, lying about half a mile to the eastward of Dorchester Point and about a mile **NW.** of The Spectacles. The fort, which occupies the whole of the island, is a regular work, built of granite, and surmounted by sod traverses. There is a passage between Castle Island and Dorchester Point, but it is not safe for strangers. **Castle Island.**

The shores of the island are protected from the action of the sea by a strong sea-wall. The centre of Fort Independence bears from

	Miles.
Fort Winthrop, (Governor's Island,) S. by W. ½ W.	⅞
Deer Island Hospital, W. by S.	2¼
Long Island Light-house, W NW.	2½
Boston State House, SE. ½ E.	2⅝
Bunker Hill Monument, SE. by S.	3⅛
Dorchester Point, (extreme southern end,) E. by N. ½ N.	⅝

Governor's Island. Governor's Island lies on the northern side of the channel, a little over half a mile from Castle Island, and is of irregular shape, about half a mile long, and about seventy feet high at its highest point. The hill at its western end is covered with earth-works, known as **Fort Winthrop**. The southeastern part of the island is much lower, and has a few small water-batteries near the shore. Flats extend from it in an **E SE.** direction for one mile and are bare at low water; but an excellent channel, in which there is not less than three fathoms at low water, leads between it and Apple Island. Fort Winthrop bears from

	Miles.
Apple Island, W. by S. ½ S.	⅝
Southern end of Deer Island, W NW.	2½
Long Island Light-house, NW. ½ W.	2⅝
The Spectacles, (northern island,) N NW.	1⅞
Boston State House, E. by S. ½ S.	2¼
Bunker Hill Monument, SE.	2⅝

President's Roads. President's Roads, a wide and good anchorage, forming the **Middle Harbor** of Boston, are contained between Governor's Island Flats and Apple Island Flats on the north, Deer island on the east, Long Island and The Spectacles on the south, and Castle and Governor's islands on the west. It is, within these limits, a mile and three-quarters long and nearly three-quarters of a mile wide

To the westward of Governor's and Castle islands lies the Inner Harbor of Boston, which includes all that portion lying abreast of the city up to the Charlestown wharves.

Dorchester Point. Dorchester Point, a large, high and well-settled peninsula, forming the southeastern extremity of Boston, lies **E.** and **W.**, and is nearly a mile long from the eastern end of South Boston to the water. Houses are thickly clustered over the whole surface of the peninsula, and upon the highest point is a very conspicuous building with a cupola. This is the **Blind Asylum**, and is one of the marks for coming in by the Hypocrite Channel. On the southern side of Dorchester Point are the approaches to **Neponset River**,—Thompson's Island forming the eastern side of the entrance; and on the west, low marsh lands join the peninsula to the mainland at Dorchester. On the north and northwest, **South Boston** is separated from Boston proper by a narrow but deep channel, called **Fort Hill Channel**, which leads into **South Bay**.

Noddles Island. The city of **Boston** is built upon a peninsula which extends from the mainland in a **NE.** direction, and is two miles and a half long. This peninsula lies between the Fort Hill Channel and Charles River,—the city being washed on three sides. Immediately opposite to the northeastern extremity of Boston, and on the northern side of the Inner Harbor, lies **East Boston**, built on Noddle's Island, which was originally composed of salt-meadow, except at its northeastern end, where the land is higher; but large portions of it have been reclaimed and built upon. The island lies on the eastern side of the harbor, and is separated from Charlestown by the Mystic River, and from the city of Chelsea by a narrow and shallow stream, called **Chelsea River**. Bridges connect it with the mainland to the northward.

Charles and Mystic Rivers. Between Charlestown and East Boston is the confluence of the Charles and Mystic rivers,—the former running to the eastward between **Cambridge, East Cambridge** and **Charlestown** on the north, and Boston on the south. Its channel is very intricate and narrow and is crossed by several bridges. The Mystic takes its rise at **Medford**, three miles and a half above its mouth, and flows through a very crooked channel, but with a general direction about **SE.** to the eastern extremity of Charlestown. Here it is crossed by a bridge, called **Chelsea Bridge**, connecting Charlestown with **Chelsea.** At the bridge the Mystic runs about **S SW.** and joins the Charles at its junction with the Inner Harbor.

The **Charlestown Navy Yard** occupies nearly all of the eastern shore-line of Charlestown, and is very conspicuous on account of its large ship-houses, foundries, smoke-stacks and large granite buildings.

Inner Harbor. The Inner Harbor of Boston is irregular in shape, and has extensive flats but a deep channel. It is about two miles long, and at its widest part, just off South Boston, is a mile in width; while at its narrowest, between Boston and East Boston, it is only a quarter of a mile wide. Extensive flats fill the large bight between Dorchester Point and the eastern extremity of Boston proper, and are called **Dorchester Flats.** These flats it is proposed to reclaim and build upon,—extending the wharf-line to the edge of the channel; and when this is done the Inner Harbor will in no place have a greater width than half a mile.

DANGERS

IN APPROACHING AND ENTERING BOSTON HARBOR BY THE MAIN SHIP CHANNEL.

I. ***Coming from the Northward.***—In approaching the Main Ship Channel from the northward great care should be taken, especially in thick weather, to avoid The Graves. These are very dangerous, bare rocks, lying in a **N.** by **E.** and **S.** by **W.** direction, and united into one ledge at low water,—forming a group six hundred yards long. Four hundred and fifty yards **NE.** ⅜ **N.** from the bare ledges is a small but very dangerous rock, bare at low water, called the *Northeast Ledge of The Graves*, or simply the *Northeast Grave*. This rock is marked by a large "Whistling Buoy," sounded by the motion of the sea. It is placed in twelve fathoms water four hundred yards **NE.** of the rock, serves to mark both the Northeast Grave and the bare ledges of The Graves proper, and can be heard at the distance of four miles. The following bearings and distances of these dangerous obstructions will be found useful in avoiding them, or in going into Boston Harbor in thick weather, after hearing the sound of the whistle. ***The Graves.***

The Graves proper bear from

	Miles.
Egg Rock Light-house, S. ½ E.	4⅛
Hotel on Nahant Head, S. by E. ½ E.	3½
Grover's Cliff, SE. by E. ½ E.	4½
Deer Island Hospital,† E.	4⅛
Long Island Light-house, E. by N. ½ N.	4¼
Outer Brewster, NE. by N. ⅜ N.	1½
Boston Light-house, NE. by N.	2⅓

The Whistling Buoy off The Northeast Grave bears from

	Miles.
Egg Rock Light-house, S. by E. ⅛ E.	4
Long Island Light-house, E. by N. ¾ N.	4¾
Boston Light-house, NE. ¾ N.	2⅞
Minot's Ledge Light-house, NW. by N. ¾ N.	7⅝

Passing The Graves, the next danger met with, if bound for the Main Ship Channel, is Martin's Ledge, which lies on the northeastern side of the approach, and is marked by a red nun-buoy of the second class (No. 2) placed in six fathoms just to the eastward of it. The ledge lies **E.** from the Outer Brewster, distant nearly three-quarters of a mile, and has sixteen feet at mean low water and fourteen at low spring tides. The buoy bears **S.** from the Whistling Buoy off the Northeast Grave, a little over a mile and a half; **NE.** ½ **N.** from Boston Ledge, three-quarters of a mile; and **NE.** ¼ **N.** from Point Allerton Bar buoy, two miles distant. ***Martin's Ledge.***

When up with Martin's Ledge another red nun-buoy will be seen on the northwestern side of the channel. This is on Boston Ledge, which has fourteen feet at lowest tides, and lies **SW.** ½ **S.** from Martin's Ledge, three-quarters of a mile; **SE.** by **S.** ½ **S.** from the eastern end of Outer Brewster, two-thirds of a mile; and **E.** by **N.** from Boston Light-house, nearly a mile and a quarter distant. The buoy is of the second class, marked No. 4, and is placed in six fathoms on the southeastern side of the ledge. ***Boston Ledge.***

Thieves' Ledge, or *The Thieves*, as it is generally called, is not in the way of vessels bound in from the northward unless beating to windward, when they may approach it in standing to the southward. It has nowhere less than four and a half fathoms at lowest tides, and is not buoyed. Its bearings and distances are as follows: From ***Thieves' Ledge.***

	Miles.
Point Allerton, E. by N. ¼ N.	2¼
Boston Light-house, E. by S. ¼ S.	2⅜
Harding's Ledge Beacon, NE. by N. ½ N.	1¼
Minot's Ledge Light-house, NW. by N.	4¾

Harding's Ledge, or *The Hardings*, is an extensive ledge, composed of a number of bare rocks surrounded by shoal water, and lying a mile and a half from the shore and to the eastward of Point Allerton. It is so far to the southward that it is not even seen by vessels coming from the northward bound in with a fair wind; but, if standing to the southward of Point Allerton, they must beware of it. The shoal ground of this ledge extends over a surface three-eighths of a mile long **NE.** and **SW.**, and a quarter of a mile wide **NW.** and **SE.** A wrought-iron beacon, thirty-one and a half feet high, marks the dry part of the ledge. It is surmounted by a day-mark, consisting of a cast-iron ring or wheel four feet in diameter, set horizontally, with twelve wooden pendants, five feet in length, attached to the rim. The whole is painted black, and is called **Harding's Ledge Beacon**; and its bearings and distances are as follows: ***Harding's Ledge.***

† Largest building visible.

	Miles.
Point Allerton Bar buoy, NW. by W.	1 5/8
Boston Light-house, NW.	2 1/4
Martin's Ledge, N.	2 3/8
The Graves Whistling Buoy, N. 1/4 E.	4
Davis' Ledge buoy, SE. 3/4 E.	4 7/8
Minot's Ledge Light-house, SE. 1/2 E.	4 1/2

A bell-buoy, painted black, and carrying a five hundred pound bell, is anchored in seven and a half fathoms about three hundred and fifty yards E NE. from the beacon; and from it Boston Light-house bears NW. 1/4 W., distant two miles and three-eighths.

Narrows Light-house and Long Island Light-house in range lead clear of The Hardings, to the northeastward of them.

After passing Boston Ledge there are no dangers met with until you are nearly abreast of Boston Light-house. Here, if beating in, do not approach the southern shore too closely, to avoid Point Allerton Bar, a ledge with eight feet at mean low water, which makes off from the bare ledge of Point Allerton in a N NE. direction. Its northern end is nearly seven hundred yards from the point; and on this end, in three and a half fathoms, is placed a black nun-buoy of the second class (No. 3) as a guide to vessels entering Nantasket Roads.

Point Allerton Bar.

The dry ledge of Point Allerton extends off four hundred yards from the shore, and its northern point is marked by a four-sided granite pyramid surmounted by a black cone. This is called **Point Allerton Beacon**, and is nearly three hundred yards inside of the black buoy on the bar,—bearing from it SW. by S. 1/4 S. There is no passage between the buoy and the beacon except at high water, and then only for light-draught vessels.

On the northern side of the channel, Boston Light-house should receive a berth to the northward of at least a quarter of a mile to avoid *the shoals* on its southern side—some of which are bare. *A rock with fifteen feet at mean low water* lies three hundred and fifty yards S. by E. from the light-house.

When abreast of Boston Light-house there will be seen a little to the northward, about six hundred yards off, a red spar-buoy. This is on Nash's Rock, which has thirteen feet at low water, lies nearly in mid-channel, and bears from Boston Light-house SW. 1/8 W., three-eighths of a mile, and from Narrows Light-house W. by N., one mile distant. The buoy is marked No. 6, and is placed in eighteen feet water on the southern side of the ledge. There is good water on both sides of Nash's Rock; but vessels wishing to pass to the northward of it must give the buoy a berth of three or four hundred yards to the southward.

Nash's Rock.

It is intended to remove Nash's Rock, by blasting, to a depth of twenty-one feet at mean low water.

When past Nash's Rock, and standing to the westward through Nantasket Roads, a number of buoys will be seen ahead and on both hands. These numerous buoys must not be allowed to confuse the judgment, for only three of them belong to this channel. The black nun-buoy* (No. 1) lying close in with the Nantasket shore, on the southern side, is on *Toddy Rocks*, which lie six hundred yards N. from the Nantasket shore and have eleven feet close to the buoy. The nun-buoy painted red and black in horizontal stripes,* which appears a little to the northward of the black buoy, and nearly in range with it when first seen, is on Hunt's Ledge, which has twelve feet at lowest tides, and lies three hundred yards N. from Toddy Rocks buoy. The buoy is on the rock, and there is good water all around it; but vessels using the Main Channel do not go near it unless beating to windward.

Hunt's Ledge.

The two last-mentioned buoys are both placed for the use of vessels intending to anchor in Nantasket Roads.

The red nun-buoy* seen nearly ahead is on the southern end of The Centurion, and the black nun-buoy* ahead, and close to the red one, is on the northern end of the same shoal. Vessels using the Main Ship Channel pass to the northward of the black buoy; while those using the Back or Western Way pass to the southward of the red buoy. Centurion Rocks, or *The Centurion*, which have twelve feet at lowest tides, lie three-eighths of a mile SE. 3/4 S. from Narrows Light-house, and W. by S. 1/2 S. from Boston Light-house, a mile and an eighth distant. They are on the southern side of the Main Channel, where it joins the Back or Western Way in Nantasket Roads. On the northern end of the ledge, in seventeen feet water, is placed a black nun-buoy* (No. 5) to mark the Main Ship Channel. On the southern end, in thirteen feet water, is placed a red nun-buoy* (No. 2) to mark the Back Way. Vessels bound up the Main Ship Channel sometimes pass to the southward of this buoy, and, rounding it to the westward, steer up for Narrows Light-house, passing to the eastward of the black buoy on George's Island Rocks.

Centurion Rocks.

The red beacon seen on the northern side of the channel is on *False Spit*, (see page 576,) the southeastern extension of Spit Bar. The beacon, which is surmounted by a red spindle with cage on top, is called **False Spit Beacon**, and is built on that part of the ledge which is dry at low water. About five hundred yards to the westward of this beacon, and just to the eastward of Narrows Light-house, stands a pyramidal granite beacon, which is called **Spit Beacon**. It marks the southwestern extremity of *Spit* or *Brewster Bar*, which is here dry at low water.

The black buoy which lies nearly due S. of Narrows Light-house, and a quarter of a mile to the westward of the buoy on the northern end of The Centurion, is on George's Island Rocks, which make off in an easterly direction from George's Island for about six hundred yards; and twelve feet at mean low water is found at this distance from the southeastern point of the island. The buoy, which is a nun* of the third class, marked No. 7, is placed in three fathoms water on the eastern end of the ledge, and lies about four hundred yards S. ¾ W. from Narrows Light-house. A channel with four fathoms, which exists between this buoy and The Centurion, is used by sailing-vessels when the wind is scant for the eastern passage. ***George's Island Rocks.***

The eastern shore of George's Island is all shoal, and must receive a good berth in passing through The Narrows.

[*Kelly's Rock*, which formerly lay nearly half a mile SE. by E. ½ E. from Narrows Light-house, and *Tower Rock*, two hundred yards SW. ½ S. from the same light, have been removed by the U. S. Engineers. They have now not less than twenty-three feet at mean low water.]

After passing Narrows Light-house there are no dangers in the channel until you are past Gallup's Island and approach the northern end of Lovell's Island, when a red nun-buoy* will be seen lying off the northwestern point of the latter. This buoy is on Seventy-four Bar, which makes out from that point in a westerly direction for three hundred and fifty yards and is nearly all dry at low water. The buoy is placed in seventeen feet on the western end of the shoal and is marked No. 10; and from it the pier on the northern side of the island bears E. ¼ S., distant three hundred and fifty yards. ***Seventy-four Bar.***

From the northwestern part of Gallup's Island an extensive shoal stretches away to the northward a distance of eight hundred yards. Much of this shoal is dry at low water, and on its northern point, nearly opposite to the red buoy on Seventy-four Bar, are placed a black nun-buoy* (No. 9) and a large stone beacon, also painted black, to the southwestward of the buoy. The buoy is off the northeastern end of a long ledge which makes off from the dry flat on which the beacon is built,—ledge and flat being known by the name of Nix's Mate or *Nick's Mate*,—and is a very extensive and dangerous shoal. **Nix's Mate Beacon** is a granite monument with square base, surmounted by an octagonal pyramid. It is painted black, and stands on the dry shoal a little over one hundred and fifty yards S. from its northern end. Deer Island Point Beacon in range with Apple Island leads clear of this shoal. (See ranges for Main Ship Channel.) ***Nix's Mate.***

The following bearings and distances may be useful: From Nix's Mate Beacon

	Miles.
Long Island Light-house bears W.—a little over	½
Pier on northern end of Lovell's Island E.	½
Narrows Light-house (just on with the southeastern point of Lovell's Island) SE. ⅞ E.	1 ¼
Western point of Gallup's Island S. ¾ E.	⅛
Old Quarantine Hospital (on Rainsford's Island) SW. by S. ½ S.	1 ⅛
Deer Island Point Beacon NW. by N.	⅝

Rounding Nix's Mate the Broad Sound Channels are entered, and the course leads to the westward through President's Roads. The channel is clear to The Lower Middle,—a distance of nearly two miles; but from Nix's Mate Beacon a shoal bar makes to the northwestward about an eighth of a mile, and on the end of this is placed a black spar-buoy (No. 9) in seventeen feet water. This spit is known as the *Northwest Spit of Nix's Mate.*

The southern end of Deer Island must not be approached too closely, for a long point, dry at low water, makes off from it in a S. by W. direction for a quarter of a mile; and on the end of this point is built a four-sided granite pyramid, painted red. The shoal is known as Deer Island Point, and the beacon as **Deer Island Point Beacon.** It is a guide to vessels coming in by the Broad Sound Channels, and is also one of the Main Ship Channel ranges. From Deer Island Point Beacon ***Deer Island Point.***

	Miles.
Nix's Mate Beacon bears SE. by S.	⅝
Long Island Light-house S SW.—a little over	½
North Spectacle Island W. by S. ½ S.	1 ½
Fort Independence W. ¾ N.	2 ½
Apple Island NW.	2

Long Island Head is tolerably bold-to, and may be safely approached within two hundred and fifty yards.

Passing through President's Roads on the W. ½ N. course, there will be seen on the northern side of the channel a large red nun-buoy, (in winter a spar with two prongs.) This is on The Lower Middle, a very extensive shoal, lying E SE. and W NW., and a mile in length, with portions of it bare at mean low water. The buoy is placed in seventeen feet on the eastern end of the bar, a little

The Lower Middle. over half a mile **N.** from the North Spectacle, and is marked No. 6. It marks the dividing point of the channel, which here separates,—one narrow but good channel, called the **North Channel**, passing along the northern side of The Lower Middle, between it and Governor's Island Point; and the other, called the Main Ship Channel, passing along the southern side of The Lower Middle, between it and Castle Island; but the latter only should be used by strangers. The red nun-buoy on the Lower Middle bears from Deer Island Point Beacon **W.** ⅝ **N.**, distant one mile and a half, and from Long Island Light-house **NW.** by **W.** ¼ **W.**, distant one mile and a half.

Passing the red buoy on the southeastern end of The Lower Middle, a black nun-buoy,* in range with Castle Island, is seen ahead. This is on Castle Rocks, which make off from the southeastern side of Castle Island in an easterly direction for nearly six hundred yards and are very shoal,—three feet at low water being found one hundred yards inside of the buoy. There is no passage to the westward of the buoy,—the flats extending clear to Dorchester Point. The buoy is marked No. 7 and is placed in eighteen feet at low water. In beating, while to the northward of it, do not approach Castle Island nearer than three hundred and fifty yards, or go inside of the buoy bearing **SE.** by **S.** ¼ **S.** Near the northern end of the island is a wharf extending out in a **NE.** direction, the end of which is in sixteen feet at low water, and will serve as a guide to vessels beating through. They should keep outside of the line from this wharf to the buoy; and if using the lead they must not stand to the westward after striking three and a quarter fathoms.

Castle Rocks.

On the northern side of the channel, nearly opposite to Castle Rocks buoy, will be seen a red nun-buoy.* This is on State Ledge, an obstruction formed by two small rocks lying on the southern side of The Lower Middle, half a mile **W.** by **N.** from the southeastern buoy. One of these rocks has only three feet at low water, and is called *Palmyra Rock.* The buoy is placed in seventeen feet to the southward of the ledge and is marked No. 8. (The southern edge of this ledge has been removed to a depth of fourteen feet at mean low water.)

State Ledge.

When past the red nun-buoy on State Ledge there will be seen ahead, also on the northern side of the channel, another red nun-buoy,* which is on the *Northwest End of The Lower Middle.* The Lower Middle, as before stated, is a mile in length in an **E SE.** and **W NW.** direction, and the North Channel unites with the Main Ship Channel at its northwestern end. At this point the buoy (which is a nun of the third class, marked No. 10) is placed in seventeen feet water, and bears from Castle Rocks buoy **N.**, one-third of a mile, and from Governor's Island Point **S.**, the same distance.

When abreast of buoy No. 10 another red nun-buoy* is visible, which is on Governor's Island Point, (as the shoal which extends off from the southeastern end of Governor's Island is called.) Its direction is **SW.** by **S.** ¼ **S.**, its length a quarter of a mile, and it is dry at low water for half its length. The buoy is of the third class, marked No. 12, and is placed in fourteen feet off the southwestern end of the shoal, and at the northern point of the junction of the North with the Main Ship Channel. Vessels using the North Channel will find the best water midway between this buoy and the buoy on the Northwest End of The Lower Middle.

Governor's Island Point.

The North Channel, as before stated, runs along the northern side of The Lower Middle, which forms its southern boundary. The northern boundary is formed by very extensive dry flats, quite bold-to, and known as Governor's Island Flats. They extend off from the eastern shore of Governor's Island in an **E SE.** direction for one mile, and their eastern point is the southern point of entrance to Governor's Island Channel, which is at present the deepest channel into Boston, but fit only for steamers. On the northern side of this eastern point is placed a black spar-buoy (No. 1) in three and a half fathoms water. This buoy is not, however, in the North Channel, but marks the southern side of the entrance to Governor's Island Channel. It should not be approached by vessels bound through the North Channel, as the flats extend a quarter of a mile to the southward of it; and on the southern side of these is placed a red spar-buoy (No. 2) in eighteen feet water, as a guide to the North Channel.

Governor's Island Flats.

When abreast of the red buoy on Governor's Island Point a black nun-buoy* will be seen bearing **NW.** ½ **W.**, and one-third of a mile off. This is on the western side of the channel, and marks a four feet spot on what is known as The Upper Middle. The buoy is a nun of the first class, marked No. 9, and is placed in seventeen feet water on the northeastern side of the shoal. The Upper Middle is not, strictly speaking, a middle ground, but a bar. In fact, from Castle Island to a point one-third of a mile above Upper Middle buoy the shoal water extends farther and farther from shore, encroaching upon the channel, and forming part of what is known as South Boston or Dorchester Flats. The Upper Middle is part of this. The bar extends nearly all the way across, and nineteen feet at mean low water is the best water that can be carried over it, except in a very narrow cut made by the U. S. Engineers in the course of their improvements, in which there is twenty-three feet at mean low water. The U. S. Engineers are at present engaged in dredging a channel across it two hundred yards wide and twenty-three feet deep, which will probably be finished before the publication of this work. When completed, an unobstructed passage, with three and three-quarter fathoms at lowest tides, will exist from Point Allerton to the anchorage off Boston.

The Upper Middle.

When abreast of the black buoy on The Upper Middle, there will be seen on the northern side of the channel, and to the westward of Governor's Island, a black spar-buoy (No. 7). This buoy is placed on the western end of Governor's Island Shoal, making off from the western point of Governor's Island; and properly belongs to Governor's Island Channel, marking its point of junction with the Main Ship Channel. ***Governor's Island Shoal.***

A little over one hundred yards to the northwestward of the black buoy on Governor's Island Shoal will be seen a red buoy, and about the same distance still farther to the northwestward a spindle. These are on Bird Island Flats, surrounding **Bird Island**, which is an island only at low water. It is covered at half-tide, and the spindle marks its southeastern point. This point is one-third of a mile **NW.** by **W.** from the western end of Governor's Island, and between them passes the deep channel commonly known as Governor's Island Channel. The spindle is iron, has a cage on top, is painted red, and is known as **Bird Island Beacon.** The buoy is a spar (No. 14), and is placed in fourteen feet on the southeastern point of Bird Island Flats. It is seventy-five yards **S.** ½ **E.** from the spindle, and vessels using the Main Ship Channel pass to the southwestward of it. ***Bird Island Flats.***

On the southwestern side of the channel, and nearly a mile above the black buoy on The Upper Middle, (from which it bears **NW.** by **W.** ¼ **W.**,) will be seen a black nun-buoy* (No. 11). This is on Slate Ledge, which lies on the northern edge of South Boston Flats, nearly midway between Dorchester Point and the Fort Hill Channel. It is two-thirds of a mile from the nearest shore, and is placed on the northeastern end of the ledge in seventeen feet water. Slate Ledge is dry at low spring tides, and there is no passage inside of it except at high water, and then only for light-draught vessels, as the extensive *South Boston* or *Dorchester Flats,* which are dry in most places at low spring tides, occupy the whole area inshore of The Upper Middle,—extending from Castle Island to the entrance to Fort Hill Channel. *South Boston Flats* are to be filled up nearly to the edge of the channel, with the exception of a narrow channel leading along the northern side of the peninsula of South Boston. ***Slate Ledge.***

There is *a shoal spot with fourteen feet* just to the northward of the buoy on Slate Ledge, lying half a mile **E SE.** from the end of **Long Wharf,** and bearing from the State House **E.** by **S.**, and from Slate Ledge buoy **N.** ⅛ **W.** It is three-eighths of a mile from the latter, and is not marked in any way. It is, however, the intention of the Harbor Commissioners to dredge this portion of the channel to a depth of twenty-three feet at mean low water,—in doing which they will remove this shoal as well as Slate Ledge.

Nearly in mid-channel, and about two hundred and fifty yards from the northeastern point of Boston, is *a shoal spot with fifteen feet at mean low water;* and two hundred yards **S.** of this spot is *another with seventeen feet at low tide.* The former bears **NE.** ¾ **E.** from Boston State House, and the latter **NE.** by **E.** ⅛ **E.** Vessels passing up to the Navy Yard, or into Charles River, may avoid these shoals by keeping close to the line of wharves on either side, according as they are bound to Charlestown or into Charles River. There are no dangers in the Charles River to the eastward of Charlestown Bridge; but beyond the bridge it will be necessary to take a pilot.

In the Mystic River, below Chelsea Bridge, there is *a very long shoal,* forming a kind of middle-ground. It makes off from the southern side of the draw in the bridge in a **S.** by **W.** direction, and extends to the mouth of the river—a distance of three-quarters of a mile. A deep channel runs on its western side, along the Navy Yard piers, into a kind of pocket at the northern end of the yard; and there is also good water on its eastern side, along the line of the East Boston wharves. Fourteen feet at mean low water is the least that can be found on this shoal. There is no buoy on its southern end, but the bearings are as follows: Bunker Hill Monument **NW.** by **W.**, and Boston State House **SW.** ½ **W.**; and it is about three hundred yards from either shore. Vessels bound to Chelsea keep close along the line of the East Boston wharves and hold the eastern side of the river aboard until up with the town. (See Sailing Directions.) ***Dangers---Mystic River.***

Above Chelsea Bridge the Mystic is a mass of flats with a narrow and crooked channel winding among them. It is crossed by three bridges between Charlestown and Medford, and it is impossible to give any sailing directions which would be intelligible. Vessels bound through the bridges must take a pilot.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BOSTON HARBOR BY THE MAIN SHIP CHANNEL.

I. ***Coming from the Northward.***—The custom heretofore has been, when coming from the northward, to pass to the southward of the Thieves' Ledge; but there is no reason why the entrance should not be made to the northward of that ledge, which has five fathoms on it and is only dangerous in rough weather. On the other hand, Harding's Ledge, which lies on the southern side of the usual entrance, is bare in some places at low water. At night it is especially recommended to pass on the northern side of The Thieves. *To enter by this passage* the course from Cape Ann is **SW.** ¼ **W.**, (heading

Sailing Directions--Boston Harbor. for Point Allerton.) On this course, when Boston Light-house bears **W.** $\frac{3}{8}$ **N.**, a mile and a quarter distant, and you are in ten and a half fathoms water, steer **W.** $\frac{3}{4}$ **S.** until it bears **N.** $\frac{1}{8}$ **W.** and is a little abaft the beam. On this course there will be not less than five fathoms and a half. *Now, if intending to anchor in Nantasket Roads,* steer **W.** $\frac{1}{2}$ **S.**, carrying not less than four fathoms, which will lead up with the red nun-buoy on the southern end of Centurion Rocks. When past this buoy, if the weather be fine, haul over towards **Windmill Point,** (the eastern point of entrance to Nantasket Gut,) and anchor at pleasure in from three to eight fathoms, gravel and sand. *But, wishing to make the usual anchorage in the Roads,* when up with the red nun-buoy on the southern end of Centurion Rocks, (as before,) steer **W SW.,** carrying not less than six fathoms, until Long Island Light-house opens well clear of the southwestern point of George's Island and the depth is eight fathoms. Vessels should now haul up for the light, and anchor when Boston Light-house is well shut in behind George's Island, in from three to four fathoms, fine grey sand. Vessels of twenty feet draught or over must anchor farther to the southward than the above range.

If bound up to the city; when Boston Light-house bears **N.** $\frac{1}{8}$ **W.,** (as before,) steer **W.** for the southern end of George's Island until Narrows Light-house bears **NW.** $\frac{3}{4}$ **N.,** in range with False Spit Beacon. This course carries not less than four fathoms and leads up to the black nun-buoy on the northwestern end of The Centurion. Thence the course is **NW.** $\frac{1}{2}$ **W.** for Nix's Mate Beacon, carrying not less than four and a half fathoms, and passing between Narrows Light-house and Fort Warren; and when the eastern end of Gallup's Island is nearly abeam, (bearing **SW.** $\frac{1}{8}$ **W.,**) steer **NW.** by **N.** for the southern end of Deer Island, having Nantasket Hill exactly astern and carrying not less than four and a half fathoms. When Nix's Mate Beacon bears **W.** $\frac{1}{4}$ **N.,** a quarter of a mile off, steer **NW.** for Deer Island Point Beacon, which will be in range with the extreme southwestern point of Apple Island. This course continued, keeping the range, will carry not less than four and a half fathoms, and will pass close to the buoy on the northeastern end of Nix's Mate, leaving it to the westward. Continue the course until Long Island Light-house bears **W SW.,** with six fathoms water, *when steer* **W.** $\frac{1}{2}$ **N.** *into President's Roads,* carrying nothing less than four fathoms. Here anchor anywhere clear of the sailing-lines; but the best anchorage is to the southward of the line from Nix's Mate to Castle Island, in from six to eight fathoms, good holding-ground.

But, if bound to Boston, continue the **W.** $\frac{1}{2}$ **N.** course, passing three-eighths of a mile to the northward of The Spectacles, until the House of Correction on the northern end of Deer Island bears **NE.** by **E.** $\frac{1}{4}$ **E.** and the highest part of the northern Spectacle **SE.** by **S.** $\frac{1}{2}$ **S.** Here the depth will be four and a half fathoms, and the course **NW.** $\frac{1}{2}$ **N.,** passing to the westward of State Ledge buoy and to the eastward of Castle Rocks buoy, and carrying four and a half fathoms, until you are up with the black nun-buoy (No. 9) on The Upper Middle. Now alter the course sufficiently to the northward to give this buoy a berth to the southwestward of seventy-five yards, and when abreast of it steer **NW.** $\frac{3}{4}$ **N.,** having the westernmost pier-head in East Boston nearly ahead and the large brick buildings in the Navy Yard directly ahead, with Bunker Hill Monument just open to the westward of them. On this course there is not less than nineteen feet. This range, (of Bunker Hill Monument just open to the westward of the brick buildings in the Navy Yard,) if kept, will make the course good in spite of the tidal current; and when Boston State House bears **NW.** by **W.** $\frac{3}{4}$ **W.,** **NW.** by **W.** should be steered, carrying four and a half fathoms, until it bears **W.** by **N.** $\frac{1}{2}$ **N.** Here vessels may anchor in four and a half fathoms off the southern part of the city, or run into the edge of the flats if of light draught, and anchor according to draught. *If bound into Mystic River and up to Chelsea;* when the State House bears **W.** by **N.** $\frac{1}{2}$ **N.,** (as before,) steer **N.** for about a third of a mile, and then **N.** by **W.** $\frac{1}{4}$ **W.,** keeping close to the East Boston wharves while passing them, and holding the eastern bank of the river aboard until up with the town. On the course past the East Boston wharves there is not less than nineteen feet at mean low water. *If bound to the Navy Yard;* steer directly for the two large buildings on **Navy Yard Point.** Run close to the point, and haul up about **NE.** by **N.** along the shore, anchoring at pleasure. On this course there is not less than four and a quarter fathoms. *If bound into Charles River;* when Boston State House bears **W.** by **N.** $\frac{1}{2}$ **N.,** steer **N.** by **W.** $\frac{3}{4}$ **W.,** only keeping pretty close to the Boston wharves, and rounding the northeastern point of the peninsula into Charles River. On this course there is not less than twenty-one feet. If bound to Cambridge, vessels must take a pilot.

The above courses pass a mile and a half to the southeastward of the Whistling Buoy on the Northeast Graves; nearly half a mile to the eastward of Martin's Ledge; three-quarters of a mile to the northward of Thieves' Ledge; a third of a mile to the eastward of Boston Ledge; a third of a mile to the southward of Shag Rocks; nearly half a mile to the northward of Point Allerton Bar; a hundred and twenty yards to the southward of Nash's Rock buoy; fifty yards to the northward of the black nun-buoy on the northwestern end of Centurion Rocks; two hundred yards to the eastward of George's Island Rocks; two hundred yards to the westward of Seventy-four Bar; fifty yards to the eastward of Nix's Mate buoy; a quarter of a mile to the southward of the red nun-buoy on the eastern end of The Lower Middle; three hundred yards to the eastward of Castle Rocks; two hundred yards to the southwestward of State Ledge; seventy-five yards to the southward of the red nun-buoy on the northwestern end of The Lower Middle; a hundred yards to the southward of the red nun-buoy on Governor's Island Point; from fifty to seventy-five yards to the eastward of The Upper Middle; nearly a quarter of a mile to the northward of Slate Ledge; and about a hundred and fifty yards to the southward of the fourteen feet shoal. *Sailing Directions--Boston Harbor.*

II. ***Coming from Sea from the Eastward.***—If from sea, and the land off Point Allerton is fallen in with, bring Boston Light-house to bear **W NW.**, three miles distant, and Minot's Ledge Light-house **SE.** by **S.**, four miles; when the depth will be ten and a half fathoms, and the course **W.** by **N.** $\frac{1}{2}$ **N.**, carrying not less than five and a half fathoms. On this course Long Island Head and light-house will be a little open to the northward. Continue it until Boston Light-house bears **N.** $\frac{1}{8}$ **W.**, with five and a half fathoms water, when, *if bound to an anchorage in Nantasket Roads*, steer **W.** $\frac{1}{2}$ **S.**, carrying four fathoms, until you are up with the red nun-buoy on the southeastern end of Centurion Rocks, when haul over towards the Nantasket shore. *Or*, steer **W SW.** from the Centurion buoy, carrying not less than six fathoms, until Long Island Light-house opens to the westward of George's Island, when the light may be steered for (about **NW.** $\frac{1}{2}$ **W.**) until Boston Light-house is shut in behind George's Island, and anchorage found in from three and a half to four and three-quarter fathoms. *If bound up to the city;* when Boston Light-house bears **N.** $\frac{1}{8}$ **W.**, (as before,) the course will be **W.**, following the directions previously given for the Main Ship Channel.

The above courses pass a quarter of a mile to the southward of Thieves' Ledge and three-quarters of a mile to the northward of Harding's Ledge.

APPROACHES TO BOSTON MAIN ENTRANCE FROM THE SOUTHWARD.

A mariner coming from the vicinity of Cape Cod, and bound to Boston, will notice, as a most conspicuous object on approaching the shore, a tall grey light-tower, apparently standing in the water at some distance from the land. This is Minot's Ledge Light-house, built on the outermost of the Cohasset Rocks, on what is called **The Outer Minot**, a ledge bare at low water. The tower, which is of granite with a bronze lantern on top, is a hundred feet high, and shows a fixed white light, of the second order of Fresnel, from a height of ninety-two feet above the sea, visible sixteen miles. The geographical position of this light-house is **Minot's Ledge Light-house.**

Latitude.....42° 16′ 9″ N.
Longitude.....70° 45′ 34″ W.,

and its bearings and distances are as follows: From

	Miles.
Cape Ann, (Thatcher's Island,) SW. by S. $\frac{1}{4}$ **S.**	23$\frac{3}{4}$
Nahant Head, SE. by S. $\frac{1}{4}$ **S.**	nearly 10$\frac{7}{8}$
Whistling Buoy off Northeast Graves, SE. by S. $\frac{1}{4}$ **S.**	7$\frac{5}{8}$
The Outer Brewster, SE. $\frac{1}{4}$ **S.**	6$\frac{3}{4}$
Boston Light-house, SE. $\frac{1}{4}$ **E.**	6$\frac{3}{4}$
Point Allerton, SE. by E.	6
Thieves' Ledge, SE. $\frac{1}{4}$ **S.**	4$\frac{3}{4}$
Bell-buoy on Harding's Ledge, SE. $\frac{1}{4}$ **E.**	4$\frac{1}{2}$
Strawberry Point, (eastern side of Cohasset Entrance,) NE. by N. $\frac{1}{4}$ **N.**	1
Scituate Light-tower, N. by W. $\frac{1}{2}$ **W.**	4$\frac{1}{2}$
Gurnet Light-houses, (entrance to Plymouth,) N NW.	18
Race Point Light-house, (Cape Cod,) NW. $\frac{1}{4}$ **W.**	26$\frac{1}{2}$
Eastern extremity of Cape Cod, (above Highland Light-house,) NW. by W.	30

A bell, struck by machinery, will be sounded during thick and foggy weather.

From Minot's Ledge to the shore lie the Cohasset Rocks, a great number of sunken and bare ledges, through and among which winds what is called the **Gangway Passage.** Strangers must never attempt to **Cohasset Rocks.**

pass inshore of the light-house, as many of the ledges are not buoyed, and among those that are so marked a stranger would certainly get confused and run ashore.

Strawberry Point, the most easterly point of Boston Bay, lies one mile **SW.** by **S.** from Minot's Ledge Light-house and marks the southern limits of the bay, as Nahant Head forms its northern end. It will appear, on approaching Minot's Ledge, as a low grassy point, with groups of houses here and there upon its surface, and among them a large hotel.

Strawberry Point.

Partly wooded hills will be seen behind the point and to the eastward of it. The deep cove which opens on the western side of the point, on passing to the westward of the light-house, is **Cohasset Harbor.** The southern shores of this harbor are low, but there is high land back of them which, showing over the low land, gives the appearance of a hilly country. The western shores are hilly and partly wooded, and the town of **Cohasset** is situated at the foot of these hills.

Passing to the westward the country will be found quite hilly and wooded, and sand hillocks are also seen here and there near the beaches. The shore-line is much cut up by coves and indentations, and small islets lie at intervals along the shore. Half a mile to the northeastward of Cohasset Entrance is a strip of sand-beach about three hundred and twenty-five yards long, which occupies what was formerly the entrance to a large cove of irregular shape, now known as Old Harbor. The beach having formed across the entrance makes of the former cove a pond.

Old Harbor.

A little over a mile and a quarter **W NW.** from Cohasset Entrance is an oblong hill fifty feet high, bare of trees and covered with grass, called **Green Hill.** Two bare rocky islets, called the Black Rocks, lie **NE.** by **E.** from this hill from a quarter to half a mile off, and there is no passage between them and the hill. A life-boat station, established under the auspices of the Massachusetts Humane Society, lies **E SE.** from Green Hill, distant half a mile. From Green Hill to the westward a low shore is passed, bounded by a narrow strip of sand-beach, behind which extend large salt-meadows. The higher and wooded lands lie still farther back, in no place approaching the beach nearer than three-eighths of a mile. This low shore extends from the base of Green Hill, a little over half a mile in a **NW.** by **W.** direction, to the foot of a group of bare hills, called the Rockland Hills, separating the low lands between them and Green Hill from the great Nantasket Beach, which begins at the foot of their western slopes and extends in an unbroken line two miles and three-quarters **N NW.** to the base of Point Allerton.

Black Rocks.

The Rockland Hills are from eighty to ninety feet high and bare of trees. Two large summer hotels, the Atlantic and Rockland houses, are built upon their summits and serve to distinguish them. When abreast of these hills the beacon on Harding's Ledge will be plainly descernible to the northward and about a mile off. It is an iron spindle painted black, and carrying a day-mark consisting of a ring or wheel four feet in diameter, set horizontally, with twelve wooden pendants attached to the rim. The bell-buoy will appear a little to the eastward of the spindle. **Nantasket Beach,** as before mentioned, extends in a **N NW.** direction to Point Allerton, and separates a large shallow bay, called **Hingham Bay,** from the ocean, and is at no point more than half a mile wide. Several grassy hills rise at intervals just back of the beach, the most prominent of which are Sagamore Head, White Head and Strawberry Hill.

Rockland Hills.

Sagamore Head is grassy, eighty feet high, and has one or two houses upon it; and four hundred yards to the northward of it rises **White Head,** a bare hillock only forty-five feet high. Three hundred yards **N.** of White Head there is a hut of refuge, established by the Massachusetts Humane Society. Nearly a mile farther to the northward rises a smooth green hill, bare of trees, and showing a single house upon its summit. This is **Strawberry Hill,** one hundred feet high; and at its base is another life-boat station, established by the same society.

The high bare cliff seen to the northward of Strawberry Hill is Point Allerton, the southern point of entrance to the Main Ship Channel. The land, rising abruptly from the water to a peak, then descending to a small low valley, and then rising again to a height of one hundred and fifteen feet, forms a head of very peculiar appearance. The southern part of the point is a round hill, bare of everything except grass, and with perpendicular faces. There is a life-boat station in the valley, between the northern point and the high cliff to the southward, and a hut of refuge on the beach three hundred and twenty-five yards from the base of the hill. A road leads from this hut to **Hull** and **Nantasket.** The sea-face of Point Allerton is protected by a sea-wall of granite.

Point Allerton.

On passing the beacon on Harding's Ledge Boston Light-house will be seen directly ahead and on with the southern end of a remarkable looking island, which looks like Point Allerton, except that the high round hill is at its northern end, and the sharp peak, like the pommel of a saddle, at its southern end; but the perpendicular cliffs and the grassy surface are exactly similar to those on Point Allerton. This is the **Great Brewster,** already described on page 575. So exactly similar has been the action of the sea on this island and Point Allerton that they appear as if they had formerly been joined together and afterwards separated by some great convulsion of nature. To the eastward of the Great Brewster will appear two bare rocky islands, lying nearly **E.** and **W.** of each other. These are the **Middle Brewster** and **Outer Brewster,** which are merely masses of black rock from fifty to sixty feet high, lying on the northern side of the main entrance.

The Brewsters.

The city of **Boston,** with the dome of the State House rising above the rest of the houses, will be seen in the distance to the westward of the light-house. The two bare islands just to the left are **Lovell's Island** and **Gallup's Island;** and **Fort Warren** is plainly visible just to the northward of Point Allerton.

The description of the **Main Ship Channel,** after passing Point Allerton, is given on pages 575–578.

DANGERS

IN APPROACHING AND ENTERING BOSTON HARBOR BY THE MAIN SHIP CHANNEL.

II. ***Coming from the Southward, from the vicinity of Cape Cod.***—In the approach to the Main Entrance from the southward the first danger met with is, as above mentioned, Minot's Ledge. There are two rocks on this shoal, known respectively as *The Outer* and *The Inner Minot*. On The Outer Minot, upon which is built the light-house, there is no water at low tide; but on The Inner Minot there is six feet at mean low water. The Outer Minot bears from Strawberry Point **NE.** by **N.** $\frac{1}{8}$ **N.**, one mile, and from Scituate Light-tower **N.** by **W.** $\frac{3}{8}$ **W.**, four miles and three-eighths distant. From The Outer Minot Point Allerton bears **NW.** by **W.**, six miles; Narrows Light-house **NW.** by **W. Nearly**, eight miles; Boston Light-house **NW.** $\frac{1}{4}$ **W.**, six miles and three-quarters; and the eastern end of Outer Brewster **NW.** $\frac{1}{2}$ **N.**, six miles and three-quarters distant. ***Minot's Ledge.***

Davis' Ledge, the northernmost of the *Stellwagen Ledges*, (which lie in a **N.** and **S.** line along the shore between Strawberry Point and Scituate,) has fourteen feet at mean low water. It is three-eighths of a mile **E.** by **S.** $\frac{1}{2}$ **S.** from Minot's Ledge Light-house, and is marked by a black nun-buoy of the second class (No. 1), placed in five fathoms on the eastern side of the shoal. Vessels must not attempt to pass between this buoy and the light-house. ***Davis' Ledge.***

After passing the Minots there are no dangers in the approaches from the southward until you are up with The Hardings; and vessels may stand to within three-quarters of a mile of the shore with safety from Minot's Ledge until up with The Hardings. There is an excellent passage between Point Allerton and this ledge, with from three to six fathoms in it; but there are several shoal spots of sixteen feet, and on this account it is not recommended to vessels of heavy draught.

Harding's Ledge, or *The Hardings*, is an extensive ledge lying to the eastward of Point Allerton and about a mile and a half from shore. There are many rocks bare at low water, and rocks awash upon it,—the shoal ground extending over a surface of three-eighths of a mile square. A wrought-iron beacon, thirty-one and a half feet high, marks the dry part of this ledge. It is surmounted by a day-mark consisting of a cast-iron ring or wheel four feet in diameter, set horizontally, with twelve wooden pendants five feet in length attached to the rim. The whole structure, which is known as **Harding's Ledge Beacon**, is painted black, and its bearings and distances are as follows: ***Harding's Ledge.***

	Miles.
Point Allerton Bar buoy, NW. by W.	$1\frac{6}{8}$
Boston Light-house, NW.	$2\frac{1}{4}$
Martin's Ledge, N.	$2\frac{3}{8}$
Whistling Buoy off The Graves, N. $\frac{1}{4}$ E.	4
Davis' Ledge buoy, SE. $\frac{3}{4}$ E.	$4\frac{7}{8}$
Minot's Ledge Light-house, SE. $\frac{1}{2}$ E.	$4\frac{1}{2}$

A bell-buoy, painted black and carrying a five hundred pound bell, is anchored in seven and a half fathoms about three hundred and fifty yards **E NE.** from the beacon; and from it Boston Light-house bears **NW.** $\frac{1}{4}$ **W.**, distant two miles and three-eighths.

Narrows Light-house and Long Island Light-house in range lead clear of The Hardings, to the northeastward of them.

When past The Hardings, Thieves' Ledge, or *The Thieves*, is left to the northward over half a mile distant. This ledge has nowhere less than four and a half fathoms at lowest tides, and is not buoyed. It lies **E.** by **N.** $\frac{1}{4}$ **N.** from Point Allerton, two miles and a quarter; **E.** by **S.** $\frac{1}{4}$ **S.** from Boston Light-house, two miles and three-eighths; **NE.** by **N.** $\frac{1}{2}$ **N.** from Harding's Ledge Beacon, one mile and an eighth; and **NW.** $\frac{3}{4}$ **W.** from Minot's Ledge Light-house, four miles and three-quarters distant. ***Thieves' Ledge.***

The course is clear, after passing The Hardings, for the entrance to the Main Ship Channel, and there are no dangers until you are up with Point Allerton, when there will be seen on the southern side of the channel a large black nun-buoy. This is on Point Allerton Bar, and is in three fathoms and a half at low water. The bar is a ledge, with eight feet at mean low water, making off from the bare ledge of Point Allerton in a **N NE.** direction. Its northern end is nearly seven hundred yards from the point, and it is upon this end that the buoy is placed, which is of the second class, marked No. 3, and serves as a guide to vessels entering Nantasket Roads. The dry ledge of Point Allerton extends off four hundred yards from the shore, and its northern point is marked by a four-sided granite pyramid surmounted by a black cone, and called **Point Allerton Beacon.** It is nearly three hundred yards inside of the buoy on the bar, and bears from it **SW.** by **S.** $\frac{1}{4}$ **S.**; and there is no passage between the beacon and the buoy except at high water, and then only for light-draught vessels. ***Point Allerton Bar.***

When past Point Allerton Bar buoy the next danger met with is on the northern side of the channel, and is called Nash's Rock; and from abreast of Boston Light-house the red spar-buoy which marks the rock will be seen about six hundred yards off and a little to the northward of the course.

Nash's Rock. This buoy is on the southern side of the rock, in twenty feet water, and is marked No. 6. Nash's Rock has thirteen feet at low water, and lies nearly in the middle of the channel. It bears from Boston Light-house **SW. ⅛ W.**, three-eighths of a mile, and from Narrows Light-house **W.** by **N.**, one mile distant. There is good water on both sides of this rock; but vessels wishing to pass to the northward of it must give the buoy a berth of three or four hundred yards to the southward. It is intended to remove Nash's Rock by blasting to a depth of twenty-one feet at mean low water.

When past Nash's Rock, and standing to the westward through Nantasket Roads, a number of buoys will be seen ahead and on both sides, which, however, need not confuse the mariner, as only three of them belong to this channel. The black nun-buoy* lying close in with the Nantasket shore, and bearing about **SW. ¼ W.**, is on Toddy Rocks, a ledge of rocks making off in a northerly

Toddy Rocks. direction for six hundred yards from the base of Nantasket Hill. Near the northern end there is a depth of ten feet at low water, but the ledge is awash at low tides a quarter of a mile from shore. The buoy is of the second class, marked No. 1, and is placed in twenty-two feet water on the northern side of the ledge. These rocks are only in the way of vessels going into Nantasket Roads for an anchorage, or bound to Hingham, Weymouth or Quincy.

The nun-buoy,* painted red and black in horizontal stripes, which appears a little to the northward of the buoy on Toddy Rocks is on Hunt's Ledge, a detached rock, with twelve

Hunt's Ledge. feet at lowest tides, which lies three hundred yards **N.** of Toddy Rocks buoy. The buoy is placed *on* the rock, and there is good water between it and Toddy Rocks,—the channel being perfectly safe even for strangers. It is much used by vessels going into the Roads for an anchorage or bound into Nantasket Gut.

The red nun-buoy* seen a little to the southward of the course is on the southern end of Centurion Rocks; and the black nun-buoy* just to the northward of it is on the northern end of the same shoal. Vessels using the Main Ship Channel pass to the northward of the black buoy, and those designing to anchor in Nantasket Roads, or bound out from the Back or Western Way, pass to the southward of the red buoy. Centurion Rocks, or *The Centurion*, which have twelve feet at lowest tides, lie

Centurion Rocks. three-eighths of a mile **SE. ¾ S.** from Narrows Light-house and one mile and an eighth **W.** by **S. ½ S.** from Boston Light-house. They are on the southern side of the Main Channel where it joins the Back Way into Nantasket Roads. On the northern end of these rocks, in seventeen feet water, is placed a black nun-buoy* (No. 5) to mark the Main Ship Channel. On the southern end of the ledge, in fifteen feet water, is placed a red nun-buoy* (No. 2) to mark the Back Way. Vessels bound up the Main Ship Channel sometimes pass to the southward of this buoy, and, rounding it on the western side, steer up for Narrows Light-house, leaving George's Island Rocks to the westward.

The black nun-buoy on the northern end of Centurion Rocks bears from the centre of Fort Warren **E.** by **S. ½ S.**, two-thirds of a mile; from Narrows Light-house **SE. ¾ S.**, three-eighths of a mile; and from Boston Light-house **W.** by **S. ½ S.**, one mile and an eighth distant.

For dangers and sailing directions for the Main Ship Channel from this point to Boston, see description of that channel, pages 580–585.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BOSTON HARBOR BY THE MAIN SHIP CHANNEL.

III. ***Coming from the Southward, from the vicinity of Cape Cod.***—When off the Highlands the direct course for Boston Light-house is **NW.** by **W. ⅛ W.**—keeping to the northward of this course if the wind is **NE.**, and to the westward if it is **SW.**—making due allowance for tide. On the flood-tide with a leading wind the direct course may be made good; but the ebb sets on to Minot's Ledge. Continue the course **NW.** by **W. ⅛ W.** for Boston Light-house (which will lead between Harding's Ledge and Thieves' Ledge in eight fathoms) until Point Allerton bears **SW.** by **W. ½ W.**, a little more than a mile distant, and Long Island Light-house **W.** by **N. ¾ N.**, with six fathoms, "sand and gravel." Now steer **W.** by **N. ½ N.**, carrying not less than five fathoms, until Boston Light-house bears **N. ⅛ W.**; when a due **W.** course should be steered for the southern end of George's Island, carrying not less than four fathoms, until you are up with the black nun-buoy on the northern end of Centurion Rocks, and Narrows Light-house bears **NW. ¾ N.**, in range with False Spit Beacon. The course is now **NW. ½ W.** for Nix's Mate Beacon, following the directions given for the Main Ship Channel, on pages 583–585.

The above courses pass one mile to the northward of Minot's Ledge Light-house; three-eighths of a mile to the eastward of the bell-buoy on Harding's Ledge; half a mile to the southward of Thieves' Ledge; one-third of a mile to the northward of Point Allerton Bar; two hundred yards to the southward of Nash's Rock; and fifty yards to the northward of the black nun-buoy on the northwestern end of Centurion Rocks.

If bound into Nantasket Roads.—When Boston Light-house bears N. ⅛ W., in five and a half fathoms, (as before,) steer W. ½ S., which will lead, with not less than four fathoms, up to the red nun-buoy on the southern end of Centurion Rocks. Pass to the southward of this buoy and steer W SW., carrying not less than six fathoms, and anchor between George's Island and Windmill Point; or, the W SW. course may be continued until Long Island Light-house is opened to the westward of George's Island, when steer about NW. ½ W. for the light-house, and anchor, when Boston Light-house is shut in behind George's Island, in from three to four fathoms, "fine grey sand;" or, haul over towards the Nantasket shore as soon as the vessel is past the Centurion buoy, and anchor according to draught. The bottom is mostly gravel and sand, and in easterly weather the open roadstead is not safe, as the sea heaves directly in. In such cases vessels of heavy draught, anchored in the open Roads, must run up the channel to President's Roads, or enter Nantasket Gut and anchor under Windmill Point. This last can be safely done, as there is from five to six fathoms water and no obstructions. *Sailing Directions--Boston Harbor.*

The above courses for Nantasket Roads pass two hundred yards to the southward of Nash's Rock buoy; three hundred yards to the northward of Hunt's Ledge buoy; and close to the red nun-buoy on the southern end of The Centurion, leaving it to the northward.

IV. *Coming from the Southward, alongshore.*—When off Scituate vessels should be careful not to go to the westward of the light-tower bearing S., keeping in from four to six fathoms water, and thus avoiding the Stellwagen Ledges. The best directions that can be given for this approach are, with Scituate Light-tower bearing S., to steer N., carrying not less than six fathoms water, until Boston Light-house bears NW. by W. ⅛ W., with fourteen fathoms. Now steer for the light-house, carrying not less than four and a half fathoms, until Point Allerton bears SW. by W. ½ W. and Long Island Light-house W. by N. ¾ N., with six fathoms water. The course is now W. by N. ½ N., carrying not less than five and a half fathoms, until Boston Light-house bears N. ⅛ W., when steer W. for the southern end of George's Island, following the directions given for the Main Ship Channel, on pages 583–585.

The above courses pass not less than half a mile to the eastward of Stellwagen Ledges; nearly three-quarters of a mile to the eastward of Davis' Ledge; and one mile to the northward of Minot's Ledge.

V. *In a vessel of light draught to come alongshore from the Southward and enter Boston Harbor.*—Scituate Light-tower may be brought to bear S. ½ E., when a N. ½ W. course made good will lead clear of Stellwagen Ledges and a quarter of a mile to the eastward of Davis' Ledge. On this course the least water will be six and a half fathoms. The bearing of Scituate Light-tower, however, must be carefully watched on the flood-tide to prevent being set on to the ledges by the current, as the direction of the current of flood is nearly across the course. When Minot's Ledge Light-house bears W. by S. ⅝ S., five-eighths of a mile distant, (eleven hundred yards,) and Boston Light-house NW. ¾ W., with fifteen and three-quarter fathoms, "stones, gravel and clay," steer NW. by W., which course made good will lead, with not less than seven fathoms, up to the bell-buoy on Harding's Ledge. Pass about three hundred yards to the eastward of this buoy and continue the course, carrying not less than four fathoms, until you are past Point Allerton and Boston Light-house bears N. ⅛ W.; when steer W., following the directions previously given.

The above courses pass first three-eighths of a mile to the eastward, and then four hundred yards to the northward, of Davis' Ledge buoy; about half a mile to the northward of Minot's Ledge Light-house; three hundred yards to the eastward of the bell-buoy on Harding's Ledge; and four hundred yards to the northward of Point Allerton Bar buoy.

In passing Minot's Ledge mariners must be careful that the course is made good, as this ledge is very dangerous even in the smoothest weather. Neither is this channel recommended except to light-draught vessels and in the day-time, as it is necessary to be able to see the beacon on Harding's Ledge in order to keep on the eastern side of it. Should the flood set a vessel to the westward, and the beacon be not visible, she would be very apt to go ashore on the ledges. It may also be remarked that, with Minot's Ledge Light-house bearing SE., a NW. course will lead clear of Harding's Ledge.

A vessel using the inshore passage, and wishing to enter the anchorage in Nantasket Roads, or bound into Nantasket Gut, may—when, on the NW. by W. course, Point Allerton Bar buoy bears SW. by S., (or is exactly abeam,) with five fathoms water—steer W. ¼ S., passing between Hunt's

Sailing Directions--Boston Harbor.

Ledge and Toddy Rocks, and carrying four and a half fathoms water. Continue this course until Long Island Light-house opens to the westward of George's Island, when steer for the light-house and anchor at discretion.

These courses pass nearly four hundred yards to the northward of Point Allerton Bar buoy; a hundred and twenty yards to the southward of the red and black nun-buoy on Hunt's Ledge; and the same distance to the northward of the black nun-buoy on Toddy Rocks.

GENERAL REMARKS

ON THE SET OF THE TIDAL CURRENTS IN THE MAIN SHIP CHANNEL AND ITS APPROACHES.

Mariners, as a general thing, do not pay sufficient attention to ranges when entering harbors with a free wind. The velocity of the tidal current in most of the harbors on the coast of New England demands, however, the closest attention to prevent the vessel being carried aside from the sailing-lines. Such is the case in entering Boston Harbor by the Main Ship Channel.

An inspection of the Current Table on the chart will show the direction and velocity of the current during the first quarter, at half-tide, and during the last quarter, of ebb and flood. Knowing these, the mariner may allow for the set of the current by changing his course, or may take a range with any two objects whose bearing from him is the same as his true course, and keeping that range will enable him to make his course good. It is always easy to catch a range ahead when on a course prescribed in the Sailing Directions. These courses are laid down as if there were no tidal current; and vessels must either allow for the set of the tide in shaping their course or must catch a range ahead and keep it until they have run their course out. By attention to head-ranges no one need fear being set upon shoals or ledges, if the sailing-lines laid down are followed. In the southern part of The Narrows the flood-tide sets on to George's Island Rocks; but these rocks are buoyed, which will enable vessels to avoid them.

From Castle Island wharf to President's Roads a good range is a high steeple in the southern part of the city, on with the northern line of Fort Independence.

To clear The Lower Middle in the night, keep Long Island Light-house open about a ship's length to the northward of Narrows Light-house. The two lights in range will clear the shoal, but it is rather close work.

To pass to the northward of The Lower Middle, the northern end of Lovell's Island should be opened a little with the southern head of the Great Brewster so as to show a gap between them.

Small vessels may approach Bird Island Flats quite alosely with safety by keeping Long Island Light-house. open with the high part of Governor's Island. This answers for day and night; but vessels of heavy draught can follow this range only at high water.

False Spit Beacon open a little to the northward of the hotel on Long Island will lead clear of Nash's Rock, to the southward of it. The sailing-lines, however, give the rock more of a berth than this range.

Long Island Light-house shut in a little on Point Allerton, or in the outer saddle, leads clear of Harding's Ledge, to the southward of it.

When Long Island Light-house is open a little to the eastward of The Graves, the passage is clear to the eastward of the Northeast Graves.

To pass between The Graves and The Roaring Bulls, (to the eastward of Green Island,) and to clear the latter, the range is to bring Boston Light-house a little to the eastward of the Middle Brewster, between it and the Outer Brewster, and keep this range until Long Island Light-house opens to the northward of Green Island. Being now clear of The Roaring Bulls, and to the northward of them, haul to the westward to avoid The Graves.

Two miles E. from Boston Light-house the tidal current is weak. Between the light-house and Point Allerton the flood sets up channel; but the ebb, coming from Nantasket Gut, sets somewhat across the channel towards the Spit. Care must be taken accordingly.

Vessels bound up through The Narrows must be careful, after passing False Spit Beacon, not to be set on to George's Island Rocks on the flood-tide, as the current of flood sets through Black Rock Channel strongly on to George's Island. The ebb sets strongly through the same channel, and vessels coming down from The Narrows, between Lovell's and Gallup's islands, are in danger of being carried by it on to Whiting's Ledge or into the Black Rock Channel.

The flood setting between Gallup's and George's islands may, in light winds, carry a vessel through when going up; but here the channel-way and anchorage are good.

In the northern part of The Narrows the flood during part of its period sets to the southward, but is not strong. The ebb, which is stronger, sets to the northward, and it requires a quick-working vessel to beat down The Narrows against an ebb-current.

Near Nix's Mate the ebb will, in light winds, carry vessels out through the Broad Sound Channels.

GENERAL DIRECTIONS

FOR VESSELS BEATING UP BOSTON BAY AND BOUND IN BY THE MAIN SHIP CHANNEL.

A vessel working up to Boston Harbor in the day-time may stretch safely anywhere from Minot's Ledge to Nahant Head until up with The Graves on one side and Harding's Ledge on the other. The northeastern part of The Graves must not be approached nearer than half a mile; and at Harding's Ledge the bell-buoy should receive a berth of at least a hundred yards to the westward and southward.

Inside of the line from The Graves to Harding's Ledge vessels may stand to the southward to within half a mile of the shore, and to the northward to within three-quarters of a mile of the eastern end of Outer Brewster, or the eastern end of Shag Rocks. When up with the latter, they must not stand farther to the northward than the range of Boston Light-house and Long Island Light-house. In passing Point Allerton care must be taken not to go inside the buoy.

In the day-time a stranger may beat up to the anchorage inside Boston Light-house, making short tacks and keeping two cables' lengths from Light-house Island; but beyond this it is not safe to go without a pilot. The description of the dangers in the channel (pages 579–583) includes the shoals surrounding the different islands, and will be found the best guide for keeping vessels off the shore; but the ledges and shoals in mid-channel (some of which are not buoyed) require the assistance of a pilot to avoid them if the vessel be of large draught.

To avoid the Cohasset Rocks and Harding's Ledge vessels should not go inside of Boston Light-house bearing **W NW.**; and when within two miles of the light-house should not, when standing to the northward, go beyond it bearing **SW. ½ W.** When near Shag Rocks, care must be taken not to go to the northward of the range of Boston Light-house and Long Island Light-house. For a proper understanding of the above directions, and for other guides to which it is not considered necessary here to refer, an inspection of the chart of Boston Harbor will be found advantageous to a stranger.

HYPOCRITE CHANNEL.

This is the first channel to the northward of the Main Ship Channel. Its entrance lies between Green Island on the north and Little Calf Island on the south, and is three-eighths of a mile wide; but the channel itself is but three hundred yards wide between the curves of eighteen feet at low water, and is not recommended for strangers. Vessels entering by this channel pass to the northward of The Brewsters. From Green Island the channel continues to the westward about a mile and a half to what is called Ram's Head, (where it joins the South Channel of Broad Sound,) and then nearly a mile farther to the westward, towards Long Island Head, joining the Main Ship Channel off Nix's Mate. There is not less than three and a half fathoms water throughout its entire length, but there are a good many sunken ledges, some of which are not buoyed.

A vessel coming from the eastward and intending to enter this channel should, when in thirteen and a half fathoms, bring Boston Light-house to bear **W.** by **S. ½ S.** and Egg Rock Light-house **N NW.** The entrance will then bear nearly **W.**, and will appear as follows:

On the southern side of the entrance the nearest land will be the **Outer Brewster,** which will appear quite differently from its description as given in the approaches to the Main Ship Channel. (See page 586.) It will look much smaller, as this view is end on, and the high bare cliff on the northern end of the **Great Brewster** will show just clear of it to the southward. The low grassy island with its southern end on with the Outer Brewster is Calf Island. It is about thirty feet high at its northern end, appears somewhat undulating in outline, is bare of trees, and has only one or two houses upon it, which are close to the southern end, and are not seen unless the island is open to the northward of the Outer Brewster. This southern end is only ten or fifteen feet high. Calf Island lies off the western end of **Middle Brewster,** from which its southern end is distant a little over three hundred yards, with a shoal passage between them unsafe for strangers. The island lies **N.** and **S.**, and is a little over six hundred yards long. From the point of view above mentioned the northern end will bear **W. ¼ S.**, distant three miles and an eighth. **Calf Island.**

To the northward of Calf Island and bearing **W.** will appear a little island about the same height as Calf Island and also bare of trees. This is Little Calf Island, lying on the southern side of the entrance to Hypocrite Channel, and about a hundred yards in diameter. From Calf Island it lies **NE. by N.**, an eighth of a mile distant, (two hundred and twenty-five yards,) and there is no passage between them. **Little Calf Island.**

To the northward of Little Calf Island (and the most northerly of the islands visible from this point of view) will appear a small island of moderate height, having an undulating surface and faced by whitish-looking rocks on its eastern side. This is Green Island, which lies on the northern side of the entrance to this channel, bears about W. ½ N., and is in range with the high land in the middle of Deer Island,—the high cliff on the northeastern face of the latter appearing just to the northward of Green Island. It is bare of trees, lies nearly N. and S., and is an eighth of a mile long. From The Graves it bears W SW., a mile and a quarter, and from the eastern end of Outer Brewster NW. ½ N., one mile distant. From the southern extremity of Green Island extends a line of bare rocks in a SW. by W. direction about three hundred and fifty yards,—its southern end marking the northern side of the entrance to Hypocrite Channel.

Green Island.

Just clear of Green Island, to the northward, will appear the public buildings on Deer Island, and north of these the other large buildings on Point Shirley, with the city of Boston in the distance behind it. To the northward of Point Shirley the high cliffs of Winthrop's Head and Grover's Cliff will appear, and as the low land between these heads will not show at this distance, they will look like islands. Winthrop's head is a precipitous headland one hundred feet high and bare of trees, situated half a mile N NE. from Point Shirley, and on the western shore of Broad Sound. To the northward of it runs a sand-beach an eighth of a mile wide and half a mile long to the mainland, about a mile to the southward of Grover's Cliff. This latter headland, the most prominent point between Point Allerton and Nahant Head, lies one mile and one-fifth N. by E. from Winthrop's Head. It is backed entirely by marsh; but the point itself is a precipitous headland eighty feet high and bare of trees.

Winthrop's Head and Grover's Cliff.

Point Shirley is the southwestern extremity of a very long and narrow peninsula, mostly sand-beach, which extends in a S. ½ W. direction from the mainland to the southward of Chelsea Beach. The point itself forms a sort of flat head to the peninsula, lies NW. and SE., and is half a mile long and about one-fifth of a mile wide, (three hundred and seventy-five yards.) Several public buildings are situated on this point.

Point Shirley.

Deer Island, which lies to the southeastward of Point Shirley, extends in a N NW. and S SE. direction, and is nearly a mile long and a third of a mile wide at its widest part. On approaching it through Hypocrite Channel it will appear as a long, gently sloping green hill, having a flag-staff on its summit. The **Houses of Correction** and other public buildings are situated on the northern end of this island, at the northern base of the central hill and behind the northeastern cliff. On the eastern slopes of the central hill is a life-boat station, established under the auspices of the Massachusetts Humane Society. Both the northern and southern ends of Deer Island are low, covered with grass only, and there are no trees except those planted for ornamental purposes. On the northern side a channel eighty yards wide separates it from Point Shirley. This passage is known as **Shirley Gut**, and is sometimes used by the steamers plying between Boston and Nahant. The current runs with great velocity, however, and the passage is therefore unfit for strangers.

Deer Island.

On entering Hypocrite Channel the southern point of Deer Island will appear ahead, and the square red pyramidal beacon to the southward of it is **Deer Island Point Beacon.** This beacon is on **Deer Island Point,** and vessels must pass to the southward of it.

A little to the southward of Deer Island Point Beacon will be seen in the distance the northernmost **Spectacle Island,** showing as a smoothly outlined hillock with precipitous faces; and next to this the high cliff of **Long Island Head,** with the light-house and keeper's dwelling on the summit. Nearly in range with the hotel on Long Island, and a little to the southward of the head, **Nix's Mate Beacon** may be seen; and the northern end of **Lovell's Island** will mark the southern side of the passage.

This is the appearance presented by the South Channel when viewed from the entrance to Hypocrite Channel, between Green and Little Calf islands.

DANGERS

IN APPROACHING AND ENTERING BOSTON HARBOR BY THE HYPOCRITE CHANNEL.

Here, as in the approach to the Main Ship Channel from the northward and eastward, the first danger met with after passing Nahant Head is The Graves. These are very dangerous bare rocks, lying in a N. by E. and S. by W. direction and six hundred yards long. Four hundred and fifty yards NE. ⅜ N. from the bare ledges is a small but very dangerous rock, bare at low water, called the *Northeast Ledge of The Graves*, or simply the *Northeast Grave*. This rock is marked by a large "Whistling Buoy," sounded by the motion of the sea. It is placed in twelve fathoms water four hundred yards NE. from the rock, and serves to mark both the Northeast Grave and the ledges of The Graves proper, and may be heard at the distance of four miles. There is from five to nine fathoms of water between the two ledges, but it is unsafe for a stranger to attempt to pass through.

The Graves.

The following bearings and distances of these dangerous obstructions will be found useful in avoiding them, or in going into Boston Harbor in thick weather, after hearing the sound of the whistle:

The Graves* proper bears from

* Bearings taken from the NE. extremity of the rocks.

	Miles.
Egg Rock Light-house, S. ½ E.	4⅛
Hotel on Nahant Head, S. by E. ½ E.	3½
Grover's Cliff, SE. by E. ½ E.	4½
Deer Island Hospital, E.	4⅛
Long Island Light-house, E. by N. ½ N.	4¼
Outer Brewster, NE. by N. ¾ N.	1½
Boston Light-house, NE. by N.	2⅛

The Whistling Buoy off the Northeast Grave bears from

	Miles.
Egg Rock Light-house, S. by E. ⅛ E.	4
Long Island Light-house, E. by N. ¾ N.	4¾
Boston Light-house, NE. ¾ N.	2¾
Minot's Ledge Light-house, NW. by N. ⅝ N.	7⅝
Entrance to Hypocrite Channel, NE. ⅛ E.	2

After passing the Whistling Buoy there is no danger in this channel, with a free wind, until you are between Green and Calf islands; but with a head wind, or if the wind be scant, when obliged to stand to the southward, towards The Brewsters, you must beware of Martin's Ledge, which lies three-quarters of a mile E. ¼ N. from the Outer Brewster, and has sixteen feet at mean low water and fourteen at lowest springs. It is marked by a red nun-buoy of the second class (No. 2), placed on its eastern point in six fathoms water. This ledge lies on the southern side of the approach to Hypocrite Channel, and the buoy bears from the Whistling Buoy off the Northeast Grave S. ½ W., one mile and five-eighths; from Boston Ledge (in the main approach) NE. ½ N., three-quarters of a mile; and from Boston Light-house NE. by E. ¾ E., one mile and three-quarters distant. ***Martin's Ledge.***

Between Martin's Ledge and the Outer Brewster lies Tewksbury Rock, which has nine feet at mean low water and is not buoyed. It is a small detached rock with deep water on all sides, and lies six hundred yards E. by N. ½ N. from the Outer Brewster, and nearly half a mile W. ½ N. from Martin's Ledge buoy. It is in the way only of vessels standing to the southward in the approach to this channel. ***Tewksbury Rock.***

After passing The Graves and standing in towards Little Calf Island there will be seen, on the northern side of the channel, a long ledge, breaking at all times of tide. This is formed by a number of detached rocks called The Roaring Bulls, and sometimes *Sunken Rocks*, lying in a line nearly NE. and SW., with from three to six fathoms water between them. They are bare in most cases at low spring tides, and extend over a surface E. and W. seven hundred yards long,—the most easterly of the group having seven feet at mean low water and about five at low spring tides. The easternmost rock bears from The Graves SW. ½ W., half a mile, and from the Whistling Buoy off the Northeast Grave SW. ⅜ W., one mile and a quarter distant. The westernmost rock bears from Green Island E. ¼ N., nearly seven hundred yards distant. There is a wide and deep channel, with from four to eight fathoms water, between The Roaring Bulls and The Graves; and an equally clear though not so deep a passage between The Bulls and Green Island,—this latter channel having from four to six fathoms in it;—but neither of these channels is fit for strangers. (See also range for clearing the Bulls in the former passage, page 590.) ***The Roaring Bulls.***

The Roaring Bulls are not buoyed, but show themselves by breakers, at high water, in almost all weathers.

The northern shores of Middle Brewster and Outer Brewster are very bold-to and may be closely approached with safety.

Green Island Ledges are the first obstructions met with, after passing The Graves, by a vessel having a free wind through this channel. The passage between Green and Little Calf islands is very narrow, obstructed by these ledges on the northern and a sunken rock on the southern side, leaving an available channel only about three hundred yards in width. The Green Island Ledges are a number of bare rocks, out of water at all times of tide, surrounded by many bare and sunken rocks, which extend off from the island in a SW. by W. ½ W. direction for nearly three hundred and fifty yards, and to the southward and southeastward nearly two hundred yards. There are no buoys off these shoals, as the bare rocks serve sufficiently well as marks to avoid them. The rule is to keep about midway between the southernmost bare rock and Little Calf Island. ***Green Island Ledges.***

In following the above directions, however, mariners must beware of *a sunken ledge, with nine feet at low water*, lying N NW. from Little Calf Island, and about one hundred and seventy-five yards distant. It is quite bold-to, and is not marked in any way.

When between Green and Little Calf islands there will be seen ahead, and about a quarter of a mile off, a red spar-buoy. This is on Half-Tide Rocks, which lie in the middle of the passage, have two feet at mean low water, and are bare at low springs. ***Half-Tide Rocks.***

They lie **SW.** by **W.** ½ **W.** from Green Island, a little over half a mile, and **NW.** by **W.** ¾ **W.** from little Calf Island, five hundred yards distant. The buoy, marked No. 2, is placed in rocky bottom on the southern side of the rocks.

The channel now turns to the southward for one-third of a mile and then runs to the westward; and on this westerly course a black can-buoy* will be seen well to the northward. This is on Alderidge's Ledge, which lies between the South Channel and Hypocrite Channel, has only four feet upon it, and is surrounded by deep water. From Half-Tide Rocks it bears **W.** ½ **N.**, five-eighths of a mile, (eleven hundred yards,) and from the northeastern point of Lovell's Island **NE.** ¾ **E.**, one mile distant. The buoy is of the second class, and is placed in five fathoms on the northwestern side of the ledge to mark the South Channel. Vessels using the Hypocrite Channel must be careful, therefore, not to approach it nearer than an eighth of a mile, (two hundred and twenty-five yards.)

Alderidge's Ledge.

Between Half-Tide Rocks and Alderidge's Ledge there is a shoal of considerable extent, four hundred yards long in a **NW.** and **SE.** direction, between the lines of three fathoms. There is a spot on this shoal exactly in range between Alderidge's and Half-Tide buoys, which has twelve feet at low water and is not buoyed. From Alderidge's Ledge buoy it bears **E.** ½ **S.**, three hundred and fifty yards distant, and is generally known as *Twelve Feet Rock.*

When past Alderidge's Ledge a large black can-buoy* will be seen directly ahead and lying some distance off the northeastern end of Lovell's Island. This is on Ram's Head, and marks the junction of this channel with the South Channel. Ram's Head is a long spit or reef, bare at low water, extending **NE.** by **N.** from the northeastern end of Lovell's Island, three-eighths of a mile, (nearly seven hundred yards.) The shoal water extends from the northeastern end of the dry spit three hundred yards to the northeastward,—there being only six feet at mean low water half a mile **NE.** from the point of Lovell's Island. The buoy is of the second class, marked No. 5, and placed in four fathoms off the northeastern point of the shoal. Vessels must be careful, in stretching over towards Lovell's Island when beating through the South Channel, not to go to the southward of the range of this buoy and the southern end of Green Island.

Ram's Head.

When past Ram Head buoy the South Channel is entered, and the course is **W.** by **S.** ½ **S.**, with Long Island Light-house a little to the southward. On this course vessels may enter the Main Ship Channel off Nix's Mate Beacon. There are no dangers in the South Channel, after passing Ram's Head, if the wind be fair. With a head-wind vessels should not stretch too far to the northward, to avoid Little Faun Bar, which is a bar or shoal making off from the eastern face of Deer Island near its southern end. It extends **E.** by **S.** from the island half a mile, and is bare at low spring tides. A red can-buoy* of the second class (No. 4) is placed in seventeen feet off the eastern end of the shoal and marks the western limits of the North Channel. The space between the North and South channels at this point is full of shoals having from eight to fifteen feet water upon them. For this reason a vessel of large draught should never attempt the North Channel without a pilot.

Little Faun Bar.

In stretching over towards Deer Island, after passing the buoy on Little Faun Bar, vessels must be careful not to approach the island nearer than three-eighths of a mile, (seven hundred yards,) as the water is shoal for a distance of nearly six hundred yards to the eastward of the southern point of the island.

Vessels should also be careful not to approach the southern point of Deer Island nearer than six hundred and fifty or seven hundred yards, as there is *a rock, bare at low water,* lying a quarter of a mile **S.** from the point. It bears from Deer Island Point Beacon **E.** by **S.** ¼ **S.**, an eighth of a mile distant, (two hundred and twenty-five yards;) and a good rule to avoid it is not to go to the northward of the beacon bearing **NW.** by **W.** ½ **W.**, in range with the northern point of Governor's Island.

Leaving this rock well to the northward, if the wind be fair, you will pass to the northward of the buoy and the black octagonal pyramid on Nix's Mate, and to the southward a red granite beacon **S.** of Deer Island. This is on Deer Island Point, a long reef, dry at low water, making off from the southern end of Deer Island in a **S.** by **W.** direction for a quarter of a mile. The beacon, which is called **Deer Island Point Beacon,** is on the extreme point of the shoal, and may be approached quite closely with four fathoms water. It bears from

Deer Island Point.

	Miles.
Nix's Mate Beacon, NW. by N.	⅜
Long Island Light-house, N NE.	½
North Spectacle Island, E. by N. ½ N.	1½
Fort Independence, E. ¾ S.	2½
Apple Island, SE.	2

Long Island Head is bold-to and may be approached safely within two hundred and fifty yards.

There are no dangers after passing Deer Island Point Beacon until you are through President's Roads and up with The Lower Middle. On the southeastern end of this shoal there is a large red nun-buoy* (No. 6), which will be seen nearly ahead just after passing Deer Island Point.

The Lower Middle is a very extensive shoal, lying **E SE.** and **W NW.** and a mile long, with portions of it bare at mean low water. The buoy is placed in seventeen feet at mean low water, and lies a little over half a mile **N.** of the North Spectacle Island. (This buoy is replaced in winter by a red spar with two prongs.) It marks the dividing point of the channel, which here separates,—one narrow but good channel, called the **North Channel**, passing along the northern side of the shoal, between it and Governor's Island Point; and the other, called the Main Ship Channel, passing along the southern side, between The Lower Middle and Castle Island; but this latter only should be used by strangers. The buoy on the southeastern end of The Lower Middle bears from Deer Island Point Beacon **W. ⅝ N.**, a mile and a half, and from Long Island Light-house **NW. by W. ¼ W.**, a mile and a half distant. ***The Lower Middle.***

When past the buoy on the southeastern end of The Lower Middle there will be seen ahead a black nun-buoy* in range with Castle Island. This is on Castle Rocks, which make off from the southeastern side of Castle Island in an easterly direction for nearly six hundred yards. The ledge is very shoal,—three feet at low water being found one hundred yards inside the buoy,—and there is no passage on the western side of it, as the flats extend clear to Dorchester Point. The buoy is marked No. 7, and is placed in eighteen feet at mean low water on the eastern point of the shoal. In beating in or out vessels must not, while to the northward of this buoy, approach Castle Island nearer than three hundred and fifty-yards, or go inside of the buoy bearing **SE. by S. ¼ S.** Near the northern end of the island there is a wharf extending out in a **NE.** direction,—the end of which is in sixteen feet at mean low water, and will serve as a guide to vessels beating through, which should keep outside of the line from the wharf to the buoy. If the lead is used, vessels must not go to the westward after striking three and a quarter fathoms. ***Castle Rocks.***

On the northern side of the channel, nearly opposite to the buoy on Castle Rocks, will be seen a red nun-buoy.* This is on State Ledge, an obstruction formed by two small rocks lying on the southern side of The Lower Middle, half a mile **W.** by **N.** from the southeastern buoy. One of these rocks has only three feet at mean low water, and is called *Palmyra Rock.* (The southern edge of this shoal has been removed to a depth of fourteen feet.) The buoy is placed in seventeen feet on the southern end of the ledge and is marked No. 8. ***State Ledge.***

When past the buoy on State Ledge there will appear ahead and on the northern side of the channel another red nun-buoy,* which is on the Northwest End of The Lower Middle. The Lower Middle, as before stated, is a mile in length in an **E SE.** and **W NW.** direction, and the North and Main channels unite at this northwestern end. At this point the buoy, which is of the third class and marked No. 10, is placed in seventeen feet water. From the buoy on Castle Rocks it bears **N.**, nearly one-third of a mile distant, and from Governor's Island Point **S.**, about the same distance. When abreast of this buoy another red nun-buoy* becomes visible about four hundred yards off and on the northern side of the channel. This is on Governor's Island Point,—the shoal extending off from the southeastern end of Governor's Island. Its direction is **SW. by S. ¼ S.**, its length a quarter of a mile, and it is dry at low water for half its length. The buoy is of the third class, marked No. 12, and is placed in fourteen feet off the southwestern end of the shoal and at the northern point of junction of the Main and North channels. Vessels using the North Channel will find the best water midway between this buoy and that on the northwestern end of The Lower Middle. ***NW. End of The Lower Middle.*** ***Governor's Island Point.***

The North Channel, as before mentioned, runs along the northern side of The Lower Middle. Its northern boundary is formed by very extensive dry flats, very bold-to, and known as Governor's Island Flats. They extend off from the eastern shore of Governor's Island in an **E SE.** direction for one mile,—their eastern point being also the southern point of entrance to Governor's Island Channel, which is at present the best channel up to Boston for heavy-draught steamers. On the northern side of this eastern point is placed a black spar-buoy (No. 1) in three and a half fathoms water, which is not, however, in the North Channel, but marks the southern side of the entrance to Governor's Island Channel, and should not be approached by vessels bound through the North Channel, as the flats extend a quarter of a mile to the southward from it. On the southern side of these flats, nearly opposite the buoy on the southeastern end of the Lower Middle, is placed a red spar-buoy (No. 2) as a guide to the North Channel. ***Governor's Island Flats.***

When abreast of the red buoy on Governor's Island Point, a black nun-buoy* will be seen bearing about **NW. ½ W.**, and one-third of a mile off. This is on the western side of the channel, and marks a four feet shoal on what is known as The Upper Middle. The buoy is of the first class and is marked No. 9. The Upper Middle is not, strictly speaking, a middle ground, but a bar. In fact, from Castle Island to a point one-third of a mile above buoy No. 9, the shoal water extends farther and farther from shore, encroaching upon the channel, and forming part of what is known as *South Boston* or *Dorchester Flats*,—the Upper Middle being part of this. The bar extends nearly all of the way across, and nineteen feet at mean low water is the best water that can be carried over it, except in a very narrow cut made by the U. S. Engineers in the course of their improvements, in which there is twenty-three feet at mean low water. ***The Upper Middle.***

The U. S. Engineers are at present engaged in dredging a channel across it two hundred yards wide and twenty-three feet deep at low water, which will probably be completed before the publication of this work. When so completed, a passage with three and three-quarter fathoms at lowest tides will exist from Point Allerton to the anchorage off Boston.

Governor's Island Shoal.

When abreast of the black buoy on The Upper Middle there will be seen, on the northern side of the channel, to the westward of Governor's Island, a black spar-buoy (No. 7). This buoy is placed on the western end of Governor's Island Shoal, making off from the western point of Governor's Island, and properly belongs to Governor's Island Channel, marking its southern point of junction with the Main Ship Channel.

Bird Island Flats.

A little over two hundred yards to the northwestward of the black buoy on Governor's Island Shoal will appear a red spar-buoy; and about the same distance still farther to the northwestward, a spindle. These are on Bird Island Flats. **Bird Island** is covered at half-tide, and the spindle marks its southeastern point, which is one-third of a mile **NW.** by **W.** from the western end of Governor's Island; and between them is the western entrance to the deep channel, commonly known as the Governor's Island Channel. The spindle on the southeastern point of Bird Island is iron and has a cage on top,—all being painted red,—and is known as **Bird Island Beacon.** The buoy is marked No. 14, and is placed in twelve feet on the southeastern point of Bird Island Flats. It is seventy-five yards **S.** ½ **E.** from the spindle, and vessels bound to Boston by the Main Ship Channel must pass to the southwestward of it.

Slate Ledge.

On the southwestern side of the channel, nearly a mile above the black buoy on The Upper Middle, (from which it bears **NW.** by **W.** ¼ **W.**,) will be seen a black nun-buoy* (No. 11). This is on Slate Ledge, which lies on the northern side of South Boston Flats, nearly midway between Dorchester Point and Fort Hill Channel. The buoy is two-thirds of a mile from the nearest shore, and is placed on the northeastern edge of the ledge in fifteen feet at mean low water. Slate Ledge is dry at low spring tides, and there is no passage inside of it except at high water, and then only for light-draught vessels, as the extensive South Boston or Dorchester Flats (which are dry in most places at low spring tides) occupy the whole area inshore of The Upper Middle and extend from Castle Island to the entrance to the Fort Hill Channel.

To the northward of Slate Ledge buoy is *a small shoal, with fourteen feet*, lying half a mile **E SE.** from the end of Long Wharf, and bearing from the State House **E.** by **S.** and from Slate Ledge buoy **N.** ⅓ **W.** It is three-eighths of a mile from the latter, and is not marked in any way. It is, however, the intention of the Harbor Commissioners to dredge this portion of the channel to a depth of twenty-three feet at mean low water, in doing which they will remove this shoal as well as Slate Ledge.

South Boston Flats are to be filled up nearly to the edge of the channel, with the exception of a narrow passage leading along the northern side of the peninsula of South Boston.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BOSTON HARBOR BY THE HYPOCRITE CHANNEL.

I. ***Coming from the Northeastward.***—The course from Cape Ann is **SW.** ¼ **W.** until Boston Light-house bears **W.** by **S.** ¾ **S.** and Egg Rock Light-house **N NW.**, when there will be thirteen and a half fathoms. Thence steer **W.** ¼ **N.**, which course made good will lead, with not less than eight fathoms, safely through between Green and Little Calf islands. On this course the southern end of Deer Island will be a little open to the northward. When Little Calf Island is abaft the beam, bearing **S.** by **E.**, and the red buoy on Half-Tide Rocks (which will be almost directly ahead) is about four hundred yards off, and Long Island Light-house bears **W.** by **S.**, and Boston Light-house **S.**, with twelve fathoms, "mud and sand," haul to the southward to avoid Half-Tide Rocks and Alderidge's Ledge, and steer **SW.** by **W.** for one-third of a mile, carrying not less than ten fathoms water, until Boston Light-house bears **S.** by **E.** ¼ **E.** Deer Island Point Beacon (red stone beacon) will now bear **W.** ¼ **N.**, (open a very little to the southward of the southern end of Castle Island,) and the course is **W.** ½ **N.** into the South Channel, which will be entered as soon as you are past Ram's Head buoy. On this course there is not less than nineteen feet, and when Long Island Light-house bears **W SW.** and Nix's Mate Beacon (black stone beacon) **SW.** by **W.** ¼ **W.**, in ten fathoms, steer **W.** by **S.** ½ **S.**, with the western edge of Long Island Head on with the southern end of south Spectacle Island, and carrying not less than six fathoms. On this course, when Deer Island Point Beacon bears **NW.** (in range with the western end of Apple Island) and Long Island Light-house **SW.** by **W.** ¼ **W.**, six and a quarter fathoms will be found in the Main Ship Channel a quarter of a mile to the northward of Nix's Mate Beacon, and **W.** ½ **E.** will lead through President's Roads; after which follow the directions given for the Main Ship Channel on page 584.

The above courses pass eight hundred yards to the northward of Martin's Ledge; about seven hundred yards to the northward of Tewksbury Rock; three-quarters of a mile to the southward of the southern end of The Graves; six hundred yards to the southward of The Roaring Bulls; nearly two hundred yards to the eastward of Half-Tide Rocks; three hundred and fifty yards to the southward of the black buoy on Alderidge's Ledge, and two hundred yards to the southward of the ledge itself; about sixty yards to the northward of Ram's Head buoy; a quarter of a mile to the northward of Nix's Mate Beacon; and a quarter of a mile to the southward of Deer Island Point Beacon. *Sailing Directions—Hypocrite Channel.*

II. ***Coming from the Northward, alongshore.***—Vessels may pass Egg Rock at a distance of eight hundred yards, and when abreast of it, in thirteen fathoms water, should steer S. by E., carrying not less than fourteen fathoms, until abreast of the Whistling Buoy off the Northeast Grave. Pass three-eighths of a mile to the eastward of this buoy, and continue the course until Long Island Light-house bears W. by S. ¼ S. and Boston Light-house is just open from behind the Outer Brewster,—bearing SW. ½ W. The depth will be fourteen fathoms, hard bottom, and the course SW. by W. ¾ W., carrying not less than seven fathoms, until Long Island Light-house is in range with Little Calf Island bearing W. ¾ S., and Boston Light-house is almost in range with the eastern point of Middle Brewster on a bearing of SW. by S. ¼ S. Here there will be ten fathoms; and thence the course is W. ¼ N. through Hypocrite Channel, carrying not less than eight fathoms, until you are within four hundred yards of the buoy on Half-Tide Rocks, with Long Island Light-house bearing W. by S. The depth will be twelve fathoms, "mud and stones," and vessels must now haul to the southward to avoid Half-Tide Rocks and Alderidge's Ledge,—steering SW. by W., and following the directions given above for the Hypocrite Channel.

These courses pass three-eighths of a mile to the eastward of the Whistling Buoy off the Northeast Grave; three-eighths of a mile (six hundred and fifty yards) to the southward of the southern end of The Graves; about six hundred yards to the southward of The Roaring Bulls; and nearly two hundred yards to the southward of Green Island Ledges.

III. ***Coming from Sea from the Eastward.***—When you are in thirteen and a half fathoms, bring Boston Light-house to bear W. by S. ¾ S. and Egg Rock Light-house N NW., and steer W. ¼ N., following the directions given above for this channel.

Hypocrite Channel is not recommended for the use of strangers, except in cases of extreme necessity. In view of such a case the bearings of Long Island Light-house and Boston Light-house are given in the Sailing Directions at the turning points in the channel; but strangers will rarely have occasion to use this passage,—the safe and convenient South Channel being just to the northward of Hypocrite Channel and the Main Ship Channel entrance only a mile to the southward.

In the Hypocrite Channel the tidal currents of flood and ebb set in the direction of the channel.

Keeping any part of The Graves open to the southward of Green Island clears Half-Tide Rocks.

SOUTH CHANNEL OF BROAD SOUND.

Besides Shirley Gut, there are two channels leading into Boston Harbor from Broad Sound. The westernmost of these, which passes within less than half a mile of Deer Island, is called the North Channel. It is shoal and full of dangers, and is not fit for strangers. The eastern channel is called the South Channel, and is almost universally used by coasters of all sizes coming into Boston from the northward and northeastward. The South Channel, which is easy of access and has plenty of water at half-flood for vessels of the largest draught, comes into Broad Sound to the westward of Green Island. It is short and straight, its range is perfect, and strangers may resort to it with safety. The course in is SW. by W. ½ W. for Nix's Mate Beacon until you are past Ram's Head buoy, when the channel turns to the westward and runs between Deer Island and Long Island into President's Roads.

Vessels of light draught often steer SW. by W. for Long Island Light-house, crossing the shoals between the North and South channels. When coming from the vicinity of Cape Ann and intending to enter by the South Channel, the course is SW. by W. for Long Island Light-house until Egg Rock Light-house bears N. by E. ½ E., when steer to the southward until Nix's Mate Beacon is on with the middle of the northern and highest part of the Blue Hills, which is the range for the channel. From this position the entrance is easily recognized by a stranger, on referring to the view. **Blue Hills.**

The channel will appear open between **Long Island Head** and a long high island with a gently sloping green surface, bare of trees, but having a flag-staff on its summit near its eastern end. Long Island Head is easily recognized by its bold, bare, precipitous face, on which the light-house and keeper's dwelling are seen. The other island with the gently sloping hill is Deer Island. The hill on Deer Island appears to be joined to another at its **Deer Island.**

northern end, which has an abrupt descent, forming a precipitous face; and over this high bluff will appear the public buildings. Both hills are on Deer Island,—the low land connecting them not being visible at this distance.

To the northward of Deer Island will be seen the open entrance to **Shirley Gut**; and the low sandy point, with houses upon it, which lies on the northern side of the opening, is Point Shirley. If the day be clear, **Fort Winthrop**, on **Point Shirley.** **Governor's Island**, may be seen over the northern end of the point,—appearing as a square earthwork on a high smooth hill. To the northward of Point Shirley the high bare cliff which rises from the water, appearing like an island, is **Winthrop's Head**. It is joined to Point Shirley by a strip of beach not visible at this distance. The city of **Boston**, with the dome of the State House in the centre, will show to the northward of this head.

If the day be clear there may be seen in the distance, towering above the low hills that are visible to the northward of the city, a slim shaft or tower, looking like a tall grey chimney. This is **Bunker Hill Monument**; and some **Grover's Cliff.** distance to the northward will appear a high bare cliff apparently rising from the water. This is Grover's Cliff, at the southern end of Chelsea Beach; and beyond this the land runs away towards Lynn, and then around to Nahant Head.

To the southward of Deer Island will be seen **Long Island**; then **Lovell's Island** in range with **Gallup's Island**; then the white walls of **Fort Warren** in the distance; then **Green Island** and **Little Calf Island** at the entrance to Hypocrite Channel; then the high, bare, precipitous head of the **Great Brewster**, presenting a very singular appearance, (see view;) then **Middle Brewster**, showing as a bare rocky island, and behind it **Nantasket Hill**, with a couple of steeples rising above it; and Boston Light-house will be in range with the eastern end of the Middle Brewster.

The channel being open from the above bearing, the course for Nix's Mate will lead safely in.

DANGERS

IN APPROACHING AND ENTERING BOSTON HARBOR BY THE SOUTH CHANNEL.

After passing Nahant Head there are no dangers encountered in crossing Broad Sound until you are nearly up with The Graves. These are very dangerous bare rocks, lying in a **N.** by **E.** and **S.** by **W.** direction, united into one ledge at low water, and forming a group six hundred yards long. Four hundred and fifty yards **NE.** $\frac{3}{4}$ **N.** from the bare ledges is a small but very dangerous ***The Graves.*** rock, bare at low water, called the *Northeast Ledge of The Graves*, or simply the *Northeast Grave*. This rock is marked by a large "Whistling Buoy," (sounded by the motion of the sea,) which is placed in twelve fathoms four hundred yards **NE.** from the rock, and serves to mark both the Northeast Grave and the bare ledges of The Graves proper. This buoy can be heard at the distance of four miles.

The following bearings and distances will be found useful in avoiding The Graves, or in going into Boston Harbor in thick weather after hearing the sound of the whistle.

The Whistling Buoy off the Northeast Grave bears from

	Miles.
Egg Rock Light-house, S. by E. $\frac{1}{8}$ E.	$4\frac{1}{8}$
Long Island Light-house, E. by N. $\frac{3}{4}$ N.	$4\frac{3}{4}$
Boston Light-house, NE. $\frac{3}{4}$ N.	$2\frac{7}{8}$
Minot's Ledge Light-house, NW. by N. $\frac{3}{4}$ N.	$7\frac{2}{3}$

The bare ledges of The Graves* proper bear from

	Miles.
Egg Rock Light-house, S. $\frac{1}{2}$ E.	$4\frac{1}{8}$
Hotel on Nahant Head, S. by E. $\frac{1}{2}$ E.	$3\frac{1}{2}$
Grover's Cliff, SE. by E. $\frac{1}{2}$ E.	$4\frac{1}{2}$
Deer Island Hospital, E.	$4\frac{1}{3}$
Long Island Light-house, E. by N. $\frac{1}{2}$ N.	$4\frac{1}{4}$
Boston Light-house, NE. by N.	$2\frac{1}{3}$

The next danger in the approach to the South Channel is the Roaring Bulls, but these are not in the way unless you are standing to the southward on a wind. In such cases you must not go to the southward of the line between Long Island Light-house and the Whistling Buoy off the Northeast Grave, or Long Island Light-house bearing **W.** by **S.** $\frac{1}{4}$ **S.**; and, if of heavy draught, you must not, when near Green Island, go farther to the southward than Long Island Light-house bearing **W SW.**, to avoid Maffitt's Ledge, which has eighteen feet at low water. The ***Roaring Bulls.*** Roaring Bulls are a number of small rocks lying in a line nearly **NE.** and **SW.**, with from three to six fathoms between them. Several of them are bare at low water of spring tides, and they extend over a surface **E.** and **W.** seven hundred yards long. The most easterly rock has five feet at lowest tides, and bears **SW.** $\frac{1}{2}$ **W.** from The Graves, half a mile distant. The westernmost rock bears **E.** $\frac{1}{4}$ **N.** from Green Island, nearly seven hundred yards distant. There is a wide and deep channel between the Bulls and The Graves, and one equally good, but not so wide,

* Bearings taken from the NE. extremity of the rocks.

between them and Green Island; but neither channel should be attempted by strangers. (See directions for clearing the Bulls, in the former passage, page 590.)

The Roaring Bulls are not buoyed, but show themselves by breakers at high water in almost all weathers.

Maffitt's Ledge, before referred to, is a detached rock with eighteen feet at mean low water and not buoyed. It lies a quarter of a mile **NW.** by **N.** ½ **N.** from Green Island, on the southern side of the channel; and from it Deer Island Point Beacon bears **W.** by **S.**, two miles and three-quarters distant. There is good water all around it, and vessels of light draught pay no attention to it. A quarter of a mile to the westward of it is Commissioner's Ledge, another detached rock, with fifteen feet at mean low water. It lies on the southern side of the channel, with six fathoms water on all sides of it, and bears **W.** from Maffitt's Ledge and half a mile **NW.** by **W.** ¼ **W.** from Green Island. It is not buoyed, but to avoid it, when in its vicinity, you must not go to the southward of Long Island Light-house bearing **W SW.**, or Nix's Mate Beacon bearing **SW.** by **W.** ½ **W.**

Commissioner's Ledge.

The Devil's Back, or *The Devil's Limb*, as it is sometimes called, is the next danger met with, and is marked by a black can-buoy, which will be seen to the southward, about half a mile off, when abreast of Green Island. It is a very dangerous ledge, three or four hundred yards long, bare in places at extreme low tide, and lies on the southern side of this channel, in a **NE.** by **N.** and **SW.** by **S.** direction. The buoy is of the first class, marked No. 1, and is placed in eighteen feet water on the northern side of the ledge. It bears from Green Island **W.** ¾ **N.**, five-eighths of a mile (eleven hundred yards) distant, and from Long Island Light-house **E.** by **N.** ⅞ **N.**

The Devil's Back.

When up with the buoy on The Devil's Limb there will be seen, on the southern side of the channel, two black can-buoys at distances of half a mile and a mile, respectively. The nearest is on Alderidge's Ledge, a sunken ledge lying between this channel and the Hypocrite Channel, with only four feet upon it at mean low water. From the black can-buoy on The Devil's Back it bears **SW.** by **W.**, half a mile distant; from Deer Island Point Beacon **E.** ¼ **N.**; and from Long Island Light-house **E.** by **N.** ½ **N.** There is from five to six fathoms water all around it; but vessels beating up must not go so far to the southward as to bring the buoy in range with Nix's Mate Beacon, to avoid the shoal ground of *Twelve Feet Rock*, which lies between this ledge and Half-Tide Rocks in the Hypocrite Channel. (See also page 594.) The buoy * on Alderidge's Ledge is of the second class, marked No. 3, and placed in five fathoms on the northwestern side of the shoal. It may be passed close-to, but the sailing-lines pass well to the northward of it.

Alderidge's Ledge.

The other black can-buoy * is on Ram's Head, a long spit or reef, bare at low water, extending off for three-eighths of a mile (nearly seven hundred yards) in a **NE.** by **N.** direction from the northeastern end of Lovell's Island. From the end of this dry spit the water is shoal for three hundred yards to the northeastward,—there being only six feet at mean low water half a mile **NE.** from the point of Lovell's Island. The buoy is of the second class, marked No. 5, and is placed in four fathoms off the northeastern point of the shoal. Vessels must be careful, when to the westward of this buoy and stretching over towards Lovell's Island, not to go to the southward of the buoy a little open with the southern end of Green Island until so far to the westward as to fairly open The Narrows between Lovell's and Gallup's islands.

Ram's Head.

In passing Alderidge's Ledge buoy and that on Ram's Head there will be seen to the northward two red can-buoys and a conical beacon of stone, (with an iron spindle and cage on top, also painted red,) which are all in the North Channel. You must not approach the buoys nearer than half a mile, nor go nearer to the beacon than one mile distant. The easternmost of these buoys (No. 2) is on the eastern end of Great Faun Bar, which makes off in an easterly direction from the eastern side of Deer Island for a little more than a mile. The buoy marks the western limits of the North Channel, and between it and the South Channel there are shoal soundings. Eleven feet at low water is found between it and The Devil's Back buoy, about five hundred yards from the former; and nine feet at mean low water between it and Alderidge's Ledge buoy, over eight hundred yards from Great Faun Bar buoy. Vessels, therefore, when standing to the northward on or near the line of Great Faun and Alderidge's buoys cannot count on more than eighteen feet at high water, if to the northward of Nix's Mate Beacon bearing **SW.** by **W.**, or Long Island Light-house bearing **W SW.**

Great Faun Bar.

The red conical beacon which is about thirteen hundred yards to the westward of Great Faun Bar buoy is called **Great Faun Bar Beacon**, and is built upon the dry part of the bar, near its eastern end. This part of Great Faun Bar makes off in an **E.** ½ **N.** direction from the middle of Deer Island, and is dry at low water to a distance of thirteen hundred yards,—or three hundred and fifty yards beyond the beacon. This beacon must not be approached, even by vessels using the North Channel, except at high water, and then not nearer than five hundred yards.

The red can-buoy * to the westward of the buoy on Great Faun Bar, and half a mile to the southward of the beacon, is on Little Faun Bar, also on the western side of the North Channel. This buoy is of the second class, marked No. 4, and placed in sixteen

Little Faun Bar.

Dangers--South Channel. feet off the eastern end of the bar, which makes off in an easterly direction for half a mile from the southeastern point of Deer Island. This bar is bare at low spring tides to within two hundred and fifty yards of the buoy.

Vessels beating up the South Channel at high water cannot go to the northward of the line of Little Faun Bar buoy and the black buoy on Alderidge's Ledge and carry over eighteen feet. A good rule is, when not drawing over fifteen feet, if it be half-flood, to go about (when to the westward of Ram's Head buoy) as soon as Deer Island Point Beacon is brought on with the northern end of The Spectacles. There is another range marking the limits of the beating channel in this vicinity, viz: Not to stand to the westward of Long Island Light-house bearing **SW.** until you are to the westward of Nix's Mate. After that you must only look out for Deer Island Point and the shoal which lies an eighth of a mile **E.** by **S.** ¼ **S.** from the beacon, (see also page 294.) The channel is clear between the beacon and Long Island Light-house.

On the course through the South Channel, when past Ram's Head buoy and approaching Nix's Mate, there will be seen, about three-quarters of a mile to the southward and westward, two nun-buoys.* The easternmost, which is red, is on *Seventy-four Bar*, which lies to the westward of the northern end of Lovell's Island and on the eastern side of the northern entrance to The Narrows. The other, which is black, is on the shoal making off from Nix's Mate Beacon. Both buoys are in the Main Ship Channel at the northern end of The Narrows, where, between Deer Island and Nix's Mate, the South Channel unites with the Main Ship Channel.

The channel, after passing Ram's Head, leads to the westward between Deer Island and Long Island; and on the northern side will be seen Deer Island Point Beacon, (painted red,) and on the southern side will be seen **Nix's Mate Beacon,** (painted black.) Nix's Mate is the name given to the dry part of the extensive shoal which stretches from the northwestern part of Gallup's Island for eight hundred yards to the northward. The beacon is an eight-sided granite pyramid, rising from a large square base, and painted black; and from it a shoal makes out in a northeasterly direction to the black nun-buoy before mentioned, which is marked No. 7. Deer Island Point Beacon in range with Apple Island leads clear of this shoal.

Nix's Mate.

From Nix's Mate Beacon, Deer Island Point Beacon bears **NW.** by **N.**, two-thirds of a mile distant, and Long Island Light-house **W.**, a little over half a mile distant.

Deer Island Point. Deer Island Point is a long reef or point, dry at low water, making off from the southern end of Deer Island in a **S.** by **W.** direction for a quarter of a mile; and its southern point is marked by a pyramidal beacon of granite, painted red, which may be approached quite closely. This beacon, which is called **Deer Island Point Beacon,** bears from

	Miles.
Nix's Mate Beacon, NW. by N.	⅔
Long Island Light-house, N NE.—a little over	½
Little Faun Bar buoy, SW. by W. ⅝ W.	⅝
Apple Island, SE.	2

After passing Deer Island there are no obstructions until you are past President's Roads, when there will be seen to the northward a large red nun-buoy.* This is on the southeastern end of The Lower Middle, a long shoal lying **E SE.** and **W NW.**, and a mile long,—portions of it being bare at mean low water. The buoy is marked No. 6, placed in fifteen feet water on the eastern end of the bar, a little over half a mile **N.** from the north Spectacle, and is replaced in winter by a red spar-buoy with two prongs. It marks the dividing point of the channel, which here separates,—one narrow but good channel (called the North Channel) passing along the northern side of the shoal, between it and Governor's Island Point, and the other, the Main Ship Channel, passing along the southern side, between the shoal and Castle Island; but this latter only should be used by strangers. The buoy on the southeastern end of The Lower Middle bears from Deer Island Point Beacon **W.** ⅝ **N.**, one mile and a half distant, and from Long Island Light-house **NW.** by **W.** ¼ **W.**, the same distance.

The Lower Middle.

When past the southeastern end of The Lower Middle a black nun-buoy* will be seen ahead, in range with Castle Island, and a red nun-buoy* on the starboard bow. The former is on Castle Rocks, the latter on State Ledge, and the channel leads directly between them. Castle Rocks make off from the southeastern side of Castle Island in an easterly direction for nearly six hundred yards, and the ledge is very shoal,—three feet at low water being found one hundred yards inshore of the buoy. There is no passage between it and the shore,—the flats extending clear to Dorchester Point. The buoy on Castle Rocks is marked No. 7, and is placed in eighteen feet water on the eastern point of the shoal. In beating in or out you must not, while to the northward of this buoy, approach Castle Island nearer than three hundred and fifty yards, or go inside of the buoy bearing **SE.** by **S.** ¼ **S.** Near the northern end of the island a wharf extends out in a **NE.** direction, the end of which is in sixteen feet at low water, and will serve as a guide to vessels beating through, which should keep outside of the line from this wharf to the buoy. If using the lead, you must not go to the westward after striking three and a quarter fathoms.

Castle Rocks.

The red nun-buoy* on the starboard bow, as before mentioned, is on State Ledge, an obstruction formed by two small rocks lying on the southern edge of The Lower Middle, half a mile W. by N. from the southeastern buoy. One of these rocks has only three feet at low water and is called *Palmyra Rock*. (The southern edge of this ledge has been removed to a depth of fourteen feet at mean low water.) The buoy is in fifteen feet, to the southward of the ledge, and is marked No. 8. When past it there will be seen on the northern side of the channel two red nun-buoys, the nearest of which (about six hundred yards off) is on the Northwest End of The Lower Middle. The Lower Middle, as before stated, is a mile in length in an E SE. and W NW. direction, and the North and Main Ship channels unite again at this northwestern end,—at which point the buoy is placed in fifteen feet water. It is a nun of the third class, marked No. 10, and vessels using the North Channel pass to the northward of it, while those using the Main Ship Channel pass to the southward. This buoy bears from the black nun-buoy on Castle Rocks N., one-third of a mile distant, and from Governor's Island Point S., about the same distance.

State Ledge.

NW. End of The Lower Middle.

The second red nun-buoy* (which is about four hundred yards NW. from the buoy on the upper end of The Lower Middle) is on Governor's Island Point, the shoal extending off from the southeastern end of Governor's Island. Its direction is SW. by S. ½ S., its length a quarter of a mile, and it is dry at low water for half its length. The buoy is of the third class, marked No. 12, and placed in twelve feet water off the southwestern end of the shoal, and at the northern side of the junction of the North and Main Ship channels. Vessels using the North Channel will find the best water midway between this buoy and that on the Northwest End of The Lower Middle.

Governor's Island Point.

The northern side of the North Channel is formed by dry flats extending off from Governor's Island in an E SE. direction, and called Governor's Island Flats. They are a mile in length, and their eastern point is also the southern point of entrance to Governor's Island Channel, which is at present the deepest channel up to Boston for steamers of heavy draught. On the northern side of this eastern point is placed a black spar-buoy (No. 1) in three and a half fathoms, which is intended to mark the southern side of the entrance to the Governor's Island Channel, and should not be approached by vessels using the North Channel, as the flats extend a quarter of a mile to the southward of it. On the southern side of these flats is placed a red spar-buoy (No. 2) as a guide to the North Channel.

Governor's Island Flats.

When abreast of the red nun-buoy on Governor's Island Point a black nun-buoy* will be seen bearing NW. ½ W., and about one-third of a mile off. This is on the western side of the channel, and marks a four feet shoal on what is known as The Upper Middle. The buoy is of the first class and is marked No. 9. The Upper Middle is not, strictly speaking, a middle ground, but a bar. In fact, from Castle Island to a point one-third of a mile above The Upper Middle buoy the shoal water extends farther and farther from shore, encroaching upon the channel, and forming part of what is known as the *South Boston* or *Dorchester Flats*. The bar extends all the way across, and nineteen feet at mean low water is the best that can be carried over it, except in a very narrow cut made by the U. S. Engineers in the course of their improvements, and which has twenty-three feet. The U. S. Engineers are at present engaged in dredging a channel across it two hundred yards wide and twenty-three feet deep at mean low water. This channel will probably be completed before the publication of this work, and when so completed an unobstructed passage, with three and three-quarter fathoms at lowest tides, will exist from Point Allerton to the anchorage off Boston.

The Upper Middle.

When abreast of the black nun-buoy on The Upper Middle there will be seen on the northern side of the channel, and to the westward of Governor's Island, a black spar-buoy (No. 7). This buoy is placed on the western end of Governor's Island Shoal, (making off from the western point of Governor's Island,) and properly belongs to Governor's Island Channel, marking its southern point of junction with the Main Ship Channel.

Governor's Island Shoal.

A little over two hundred yards to the northwestward of the black spar-buoy on Governor's Island Shoal will be seen a red spar-buoy; and about the same distance still farther to the northwestward, a spindle. These are on Bird Island Flats. **Bird Island** is covered at half-tide, and the spindle marks its southeastern point, which is one-third of a mile NW. by W. from the western end of Governor's Island. Between them lies the western entrance to the deep channel known as Governor's Island Channel. **Bird Island Beacon** is iron and has a cage on top, all painted red. The buoy is marked No. 14, and is placed in twelve feet water on the southeastern point of the flats. It is seventy-five yards S. ½ E. from the spindle, and vessels bound to Boston by the Main Ship Channel pass to the southwestward of it.

Bird Island Flats.

On the southwestern side of the channel, and nearly a mile above the black nun-buoy on The Upper Middle, (from which it bears NW. by W. ½ W.,) will be seen a black nun-buoy* (No. 11). This is on Slate Ledge, which lies on the northern edge of South Boston Flats, nearly midway between Dorchester Point and Fort Hill Channel. It is two-thirds of a mile from the nearest shore, and the buoy is placed on its northeastern end in fifteen feet

Slate Ledge.

Dangers--South Channel. water. Slate Ledge is dry at low spring tides, and there is no passage inside of it except at high water, and then only for light-draught vessels, as the extensive South Boston Flats (which are dry in most places at low spring tides) occupy the whole area inshore of The Upper Middle, extending from Castle Island to the entrance to the Fort Hill Channel.

To the northward of Slate Ledge buoy is *a small shoal* lying half a mile **E SE.** from the end of Long Wharf, and bearing from the State House **E.** by **S.**, and from Slate Ledge buoy **N.** $\frac{1}{8}$ **W.** It is three-eighths of a mile from the latter, and is not marked in any way. *Fourteen and a half feet is the shoalest water at mean low tides;* but it is the intention of the Harbor Commissioners to dredge this portion of the channel to a depth of twenty-three feet at mean low water, in doing which they will remove this shoal as well as Slate Ledge.

South Boston Flats are to be filled up nearly to the edge of the channel, with the exception of a narrow passage along the northern side of the peninsula of South Boston.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BOSTON HARBOR BY THE SOUTH CHANNEL.

I. ***From Cape Ann in the day-time.***—When a mile to the southeastward of the lights on Thatcher's Island, in twenty-five fathoms water, steer **SW.** $\frac{3}{4}$ **W.**, carrying not less than fifteen fathoms, until you are exactly between Nahant Head and Minot's Ledge Light-house. Nix's Mate Beacon will now bear **SW.** by **W.** $\frac{1}{4}$ **W.** and will be in range with the northernmost and highest of the Blue Hills. Now steer that course, keeping the range and carrying not less than twenty feet, until Long Island Light-house bears **W.** by **S.** $\frac{3}{4}$ **S.** and Deer Island Point Beacon **W.** $\frac{1}{4}$ **N.**, when you will have passed Ram's Head buoy and will be in ten fathoms water. The course is now **W.** by **S.** $\frac{1}{2}$ **S.** for the cliff on the northern side of Long Island Head, which will be on with the southern end of south Spectacle Island. Keep this range, on which there will be not less than six fathoms, until Deer Island Point Beacon bears **NW.** and is on with the western end of Apple Island; when Long Island Light-house will bear **SW.** by **W.** $\frac{3}{4}$ **W.**, and there will be six and a quarter fathoms in the Main Ship Channel. Now steer **W.** $\frac{1}{2}$ **N.** through President's Roads, and follow the directions given for that channel on pages 583–585.

II. ***From Cape Ann by night.***—Steer **SW.** $\frac{3}{4}$ **W.**, as before, until Minot's Ledge Light-house bears **SE.** by **S.** $\frac{3}{4}$ **S.**, Long Island Light-house **SW.** by **W.** $\frac{1}{2}$ **W.**, and Egg Rock Light-house **N.** by **W.**, when the depth will be fourteen and a half fathoms, and the course **SW.** by **W.** $\frac{1}{4}$ **W.**, with Long Island Light-house a little open to the northward. Continue this course, carrying not less than twenty feet water, until Narrows Light-house bears **S.** $\frac{3}{4}$ **E.** and Long Island Light-house **W.** by **S.** $\frac{3}{4}$ **S.** and you are in ten fathoms. Now steer **W.** by **S.** $\frac{1}{2}$ **S.**, carrying not less than six fathoms water, and continue this course until Narrows Light-house is in range with Nix's Mate Beacon on a bearing of **SE.** $\frac{3}{4}$ **E.**, when there will be six fathoms water. (The range may not be visible, but the bearing of the light can be obtained.) Thence the course is **W.** by **N.** through President's Roads, carrying five fathoms, until the black nun-buoy on Castle Rocks is made, or the red nun-buoy on the southeastern end of The Lower Middle, when **NW.** $\frac{1}{2}$ **N.** leads up the channel to The Upper Middle; after which the directions given for the Main Ship Channel, on page 584, must be followed.

Or, if Deer Island Point Beacon can be seen on the **W.** by **S.** $\frac{1}{2}$ **S.** course, as soon as it bears **NW.** and Long Island Light-house **SW.** by **W.** $\frac{3}{4}$ **W.**, with six and a quarter fathoms water, steer **W.** $\frac{1}{2}$ **N.**, and follow the directions given on page 584.

III. ***From vicinity of Salem Entrance.***—When Baker's Island Lights bear **NW.** by **N.** $\frac{3}{4}$ **N.**, about three miles distant, and Marblehead Light-house **W NW.**, four miles distant, in twenty fathoms water, all dangers are cleared, and Egg Rock Light-house will bear **W.** by **S.** $\frac{1}{2}$ **S.**, eight miles off. The course is now **SW.** by **W.**, carrying sixteen fathoms, and Long Island Light-house will soon be made directly ahead. Steer for it until Egg Rock Light-house bears **NW.** by **N.** $\frac{3}{4}$ **N.** and Narrows Light-house **SW.** $\frac{1}{2}$ **S.**; when steer for the latter, carrying not less than ten fathoms, until Nix's Mate Beacon bears **SW.** by **W.** $\frac{1}{4}$ **W.** and is in range with the northernmost and highest of the Blue Hills. Now steer for it, keeping the range, carrying not less than twenty feet water, and follow the directions given above.

IV. ***At night, from off Salem.***—Steer **SW.** by **W.**, as above, until Egg Rock Light-house bears **NW.** by **N.** $\frac{3}{4}$ **N.** and Narrows Light-house **SW.** $\frac{1}{2}$ **S.**; when there will be sixteen fathoms, and the

course will be SW. ½ S. until Long Island Light-house bears SW. by W. ¾ W. and Egg Rock Light-house N. ¼ W. There will be ten fathoms, "fine gravel," on these bearings; and SW. by W. ¼ W. for Nix's Mate Beacon will lead safely in, following the directions given for entering by the South Channel during the night. *Sailing Directions--South Channel.*

V. ***To come alongshore past Nahant Head and enter the South Channel.***—When Egg Rock Light-house bears W. by N., distant three-eighths of a mile, and you are in ten fathoms, steer S. by W. ¼ W. On this course you will carry not less than twelve fathoms, and, on crossing Broad Sound, the high cliff of the Great Brewster will be seen rising from behind Calf Island. Keep this range until you are within a mile and a half of the latter, in ten fathoms water, when Nix's Mate Beacon will bear SW. by W. ¼ W. and will be on with the highest Blue Hill, as before. From this position the directions given above must be followed.

The South Channel courses pass three-quarters of a mile to the westward of the Whistling Buoy off the Northeast Grave; three-eighths of a mile to the northward of Maffitt's Ledge; three hundred and fifty yards to the westward of Commissioner's Ledge; a quarter of a mile to the westward of The Devil's Back buoy; a little over half a mile to the eastward of Great Faun Bar buoy; a quarter of a mile to the northward of Alderidge's Ledge; a little over two hundred yards to the northward of Ram's Head buoy; half a mile to the southward of Little Faun Bar buoy; four hundred yards to the northward of Nix's Mate buoy; a quarter of a mile to the northward of Nix's Mate Beacon; and a little over a quarter of a mile to the southward of Deer Island Point Beacon.

In this channel the current of ebb, after passing Ram's Head, sets to the eastward, and care must be taken not to be carried on to Alderidge's Ledge when bound out on the ebb tide. To the northward of this ledge the current sets in the direction of the channel.

NORTH CHANNEL OF BROAD SOUND.

This channel leads across Great and Little Faun bars, and is never used except by vessels of light draught. Its entrance is just to the westward of the entrance to the South Channel, and its course about SW. by W. ½ W. Vessels of lighter draught than ten feet, however, often bring Long Island Light-house to bear SW. by W. and run for it, which carries them safely across. Thirteen feet at mean low water can be carried across the two bars, but the channel is narrow and unsafe for strangers unless of very light draught. A shoal with ten feet lies to the eastward of Little Faun Bar buoy, and about two hundred and fifty yards from it.

DANGERS

IN APPROACHING AND ENTERING BOSTON HARBOR BY THE NORTH CHANNEL.

The course from Cape Ann, usually steered by vessels intending to enter by the North Channel, leads a little over a mile to the northwestward of The Graves. Should the Whistling Buoy be fallen in with, however, in thick weather, it may be of use to state here that Great Faun Bar buoy bears exactly W. ¾ S. from it, distant three miles and a quarter, and there is nothing in the way.

In approaching this channel the first danger met with is Great Faun Bar, a long spit or bar making off from the eastern shore of Deer Island in an E. ½ S. direction for nearly one mile and three-quarters. For twelve hundred yards of this length it is bare at low water,—the bare sand-spit having a general course E. by N.;—and its eastern end is marked by a stone beacon, called **Great Faun Bar Beacon.** To the eastward of this the shoal water continues, with depths varying from two to seventeen feet. The North Channel leads directly over this shoal in from fourteen to fifteen feet at mean low water. Great Faun Bar Beacon is placed about three hundred and fifty yards back from the extreme point of the dry spit. It is a granite cone rising from a square base, and surmounted by an iron spindle and cage, all being painted red. Vessels must not approach this beacon nearer than three-eighths of a mile,—twelve feet only being found at that distance from it. Its bearings are as follows: From *Great Faun Bar.*

		Miles.
Nahant Head, SW. by S.	**a little over**	4 ⅛
The Graves Whistling Buoy, W. ½ S.	" "	3 ½
Long Island Light-house, NE. by N.		1 ½

Two-thirds of a mile to the eastward of Great Faun Bar Beacon there is placed, in fifteen feet water, a red can-buoy of the second class, as a guide to the North Channel. This buoy, which is marked No. 2, shows the best water over the bar, and must be left to the westward, and may be passed close-to. From Long Island Light-house it bears NE. ½ E., distant one mile and three-quarters. When up with it there will be seen ahead, and nearly in range with Deer Island Point Beacon, another

Little Faun Bar. red can-buoy.* This is on Little Faun Bar, which makes out from the southeastern end of Deer Island in an **E.** $\frac{3}{4}$ **S.** direction for a mile and a quarter to the edge of the South Channel. For three-eighths of a mile of this length (about seven hundred yards) it is dry at low tides; and about two hundred yards to the eastward of the dry bar, in fifteen feet at mean low water, is placed the buoy, which is of the second class, and marked No. 4. This buoy is a guide for the North Channel, which crosses the bar in thirteen feet; and to the eastward of it the bar has soundings varying from nine to seventeen feet. About two hundred and fifty yards **E.** from the buoy there *is but ten feet,* on a shoal extending **E.** and **W.** for three hundred yards, and which is on the eastern side of the North Channel. Little Faun Bar buoy marks the western limits of the channel, and bears from

	Miles.
Great Faun Bar buoy, SW. by W. $\frac{1}{2}$ **W.**	$\frac{3}{8}$
Deer Island Point Beacon, NE. by E. $\frac{3}{4}$ **E.**	$\frac{3}{8}$
Long Island Light-house, NE. $\frac{1}{4}$ **N.**	$1\frac{1}{8}$

After passing Little Faun Bar buoy the course leads for Long Island Light-house to avoid the shoals **S.** of Little Faun Bar and Deer Island Point,—the latter being marked by a granite pyramid, painted red, called **Deer Island Point Beacon.** The eastern shore of Deer Island must receive a berth of at least six hundred yards, and the southern point not less than seven hundred yards; for **E.** by **S.** $\frac{1}{4}$ **S.** from the beacon lies a *rock, bare at low water,* at the distance of an eighth of a mile, (two hundred and twenty-five yards.) To avoid this you must not go to the northward of Deer Island Point Beacon bearing **NW.** by **W.** $\frac{1}{2}$ **W.**, on with the northern point of Governor's Island.

Deer Island Point.

There are no other dangers in the North Channel.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BOSTON HARBOR BY THE NORTH CHANNEL.

From off Cape Ann, when clear of The Londoner, steer **SW.** by **W.** On this course Long Island Light-house will be made directly ahead, and must be steered for until you are past The Graves and up with Great Faun Bar buoy. Pass close to this buoy, leaving it to the westward, and steer **SW.** by **W.** $\frac{1}{2}$ **W.** for Little Faun Bar buoy. When up with this buoy pass to the eastward of it, close-to, and steer **SW.** for Long Island Light-house. On this course, when Deer Island Point Beacon bears **NW.** $\frac{1}{4}$ **W.**, or is exactly abeam, steer **W.** $\frac{1}{4}$ **N.** through President's Roads, and proceed as directed for the Main Ship Channel. On the above courses the least water is eleven feet. *Or,* bring Long Island Light-house to bear **SW.** by **W.** and run for it until Deer Island Point Beacon bears **NW.** by **N.**, in seven fathoms water, with Nix's Mate Beacon bearing **SE.** by **S.** The course is now **W.** $\frac{1}{2}$ **N.** through President's Roads, following the directions given for the Main Ship Channel. *Or,* continue the course for Long Island Light-house until Nix's Mate Beacon is in range with Narrows Light-house on a bearing of **SE.** $\frac{3}{4}$ **E.**, when steer **W.** $\frac{3}{4}$ **N.**, and proceed as directed for the Main Ship Channel. This last channel may be run safely at night, as Long Island Light-house is steered for, and the course is altered only on a bearing of Narrows Light-house. It crosses Great Faun Bar in thirteen feet on the eastern side of the channel, and leaves the buoy about one hundred and fifty yards to the westward. It also crosses Little Faun Bar in thirteen feet on the eastern side of the ten feet shoal, and leaves the buoy a quarter of a mile to the westward. Vessels of light draught may safely run it unless there is a heavy sea.

The North Channel is never attempted by strangers; but with the above directions a stranger may, in case of necessity, run safely in to an anchorage. It is not recommended, however, to any but vessels of light draught; and to strangers only in case of urgent necessity.

SHIRLEY GUT.

This narrow and intricate passage is only fit for steamers, and must never be attempted by strangers under any circumstances. Thirteen feet at mean low water may be taken through it under the guidance of a pilot; but the channel is crooked and dangerous, with a swift current. It leads between Point Shirley and Deer Island, and is about one hundred and fifty yards wide.

DANGERS

IN APPROACHING AND ENTERING BOSTON HARBOR THROUGH SHIRLEY GUT.

The first danger met with in approaching this passage lies on the western side of the approaches and **E.** of Winthrop's Head; and when the head bears **W.**, about a mile and a quarter distant, there will be seen on the starboard bow, about twelve hundred yards distant, a red spar-buoy (No. 2). This

is on Winthrop's Bar, which makes off from Winthrop's Head in an E. by S. direction for three-quarters of a mile, with not over six feet upon it at mean low water; and for eight hundred yards of this distance the bar is bare at mean low water. The buoy is placed in fifteen feet off the southeastern side of the shoal, and bears from Nahant Head SW. ¼ S., about three miles and a half distant, and from the buoy on Deer Island North Point E. by N. ¾ N., nearly one mile distant. It is well to give it a berth when passing it, so as to make a straight course for the latter buoy, as there is an *eight feet spot* between the two buoys. ***Winthrop's Bar.***

When past Winthrop's Bar buoy the course leads directly for Point Shirley, (easily distinguished by the almshouse and other public buildings upon it,) and there will be seen in range with the point a black spar-buoy (No. 1). This is placed on the northern point of the shoal making off from the northern end of Deer Island and which is known as *Deer Island North Point.* The channel leads to the westward of it, and makes a sudden and sharp turn around the buoy to the southward,—the current running with considerable velocity. This is the most dangerous part of the channel.

When through the Gut a red spar-buoy will be seen ahead, about half a mile off, which must be steered for to avoid the long flats making off from the western shore of Deer Island, and called Deer Island Flats. These flats have from four to six feet at mean low water, and run about W SW. for half a mile, almost over to the red buoy above mentioned, which must be passed close-to to avoid them. The buoy, however, is on the southeastern end of Apple Island Flats, which are dry at low water and surround Apple Island,—extending in a SE. direction about eleven hundred yards. At low water the flats, being quite bold-to, mark the limits of the channel with great exactness and may be passed close-to. The buoy, which is marked No. 6, is placed in twelve feet just clear of the shoals, and is to be left to the westward by vessels coming in, whether standing to the southward into President's Roads or turning to the westward and entering Governor's Island Channel,—the northern point of entrance to which it marks. ***Deer Island Flats.*** ***Apple Island Flats.***

When abreast of the buoy on Apple Island Flats, if intending to proceed up to Boston by the Main Ship Channel, steer about S. by W. for the eastern end of Spectacle Island. In steering this course the black spar-buoy on Governor's Island Flats will be left well to the westward. Governor's Island Flats are extensive shoals lying off the eastern shore of Governor's Island, (from which they run E SE. for about a mile,) and are bare at low spring tides throughout their entire length. Between these flats and Apple Island Flats runs the Governor's Island Channel, and the black spar-buoy marks the southern point of entrance to it. Between Governor's Island Flats and The Lower Middle lies the northern branch of the Main Ship Channel, called the **North Channel**, and a red spar-buoy marks its northern point of entrance. Vessels using Shirley Gut passage may pass up to Boston through either of these channels, or may continue past the red buoy on the southeastern end of The Lower Middle and go up the Main Ship Channel way. ***Governor's Island Flats.***

The black buoy on Governor's Island Flats is marked No. 1, as a guide to Governor's Island Channel, and is placed in twenty feet at mean low water. If bound into President's Roads, when past this buoy you must take care not to go ashore on The Middle Ground, a mass of shoal ground lying in an E SE. and W NW. direction, between Governor's Island Flats and Deer Island Point. It is half a mile long, but there is only one part of it which is dangerous to vessels using Shirley Gut passage. This is its western end, which is about three-eighths of a mile SE. by S. from the black buoy (No. 1) on Governor's Island Flats, and has seven feet at mean low water and five at lowest tides. It is marked by a red spar-buoy (No. 4) placed in twenty feet about one hundred yards to the westward of the shoal. The entrance to Governor's Island Channel leads between this and the black buoy on Governor's Island Flats, and vessels bound through Shirley Gut from the Main Ship Channel also pass between them. In coming into the Main Ship Channel from Shirley Gut vessels must pass to the *eastward* of the black and to the *westward* of the red buoy, notwithstanding their colors. The range of the eastern end of north Spectacle Island bearing S. by W. ½ W. leads clear of this shoal. ***The Middle Ground.***

There is good water on both sides of The Middle Ground, but vessels are cautioned against using the eastern passage unless of light draught, as the shoal water extends nearly over to Deer Island Flats, leaving only a very narrow channel between. Vessels of light draught using this passage should round Deer Island Point Beacon and steer NW. by W. for the red buoy on Apple Island Flats; but large vessels should go up into Governor's Island Channel by the western passage.

When past the black buoy on Governor's Island Flats there will be seen to the southwestward, about seven hundred yards off, a large red nun-buoy,* which is on the southeastern end of *The Lower Middle.* Now, *if bound up the Main Ship Channel,* steer for this buoy and pass to the eastward of it,—continuing the course to the southward until State Ledge buoy (red nun-buoy*) is in range with the red nun-buoy* on the Northwest End of The Lower Middle on a bearing of NW. ¼ W. Now steer that course, and proceed as directed for the Main Ship Channel.

But, if bound up the North Channel, (which is the usual passage,) round the southeastern end of Governor's Island Flats, (on which there is a red spar-buoy, marked No. 2,) and steer to the westward

along their southern side. On this course there will be seen ahead two red nun-buoys,*—one on each bow. The buoy to the southward is on the Northwest End of The Lower Middle, and that to the northward is on Governor's Island Point,—the shoal extending off from the southeastern end of Governor's Island. Its direction is **SW.** by **S.** ¼ **S.**, its length a quarter of a mile, and it is dry at low water for half its length. The buoy is of the third class, marked No. 12, placed in fourteen feet water off the southwestern end of the shoal, and marks the junction of this channel with the Main Ship Channel. Vessels must pass to the southward of it, and to the northward and westward of the red buoy on the Northwest End of The Lower Middle.

Governor's Island Point.

When past these buoys you are in the Main Ship Channel, and must steer for the black buoy on The Upper Middle, following the directions given for that channel, on page 584. The least water in the passage is thirteen feet.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BOSTON HARBOR THROUGH SHIRLEY GUT.

From Nahant Head (which may be passed within eight hundred yards) steer **SW.** for about four miles. This will bring you up with the red spar-buoy on Winthrop's Bar,—which must be left about four hundred and fifty yards to the westward,—and when it bears **NW.** by **N.** ½ **N.** and Great Faun Bar Beacon **S.** ¾ **W.**, steer **W.** ½ **S.** for Deer Island North Point buoy. Continue this course (on which there will be not less than sixteen feet) until you are within four hundred yards of the buoy, when alter the course to the northward so as to pass about one hundred yards to the northward of it, carrying not less than thirteen feet water. When abreast of the buoy turn short to the southward, passing to the westward of it, close-to, (carrying not less than four fathoms,) and steer **S.** by **W.** towards Deer Island for about an eighth of a mile, (two hundred and twenty-five yards,) until you are within one hundred and fifty yards of the Deer Island shore, with five fathoms water. Thence **W.** by **S.** ½ **S.** must be steered for the red buoy on Apple Island Flats, which will be in range with the middle of Fort Independence, (Castle Island.) On this course there will be not less than nineteen feet water; and when up with this buoy, *if bound through Governor's Island Channel,* pass to the southward of it, and, rounding it to the westward, steer **W.** by **N.** ½ **N.** (with not less than four fathoms) for the centre of Fort Winthrop,—following the directions given for that channel, on page 608.

But, if bound into President's Roads and through the northern branch of the Main Ship Channel, (the North Channel,) when up with the buoy on Apple Island Flats steer **S.** by **W.** ½ **W.**, passing between the black buoy on Governor's Island Flats and the red buoy on the western end of The Middle Ground. Continue this course until State Ledge buoy bears **W.** ⅛ **S.**, when that course should be steered for about three-eighths of a mile, carrying not less than four fathoms water. When the red nun-buoy on Governor's Island Point bears **NW.** by **W.** ⅞ **W.**, steer **NW.** by **W.** ½ **W.**, which will lead you safely through the North Channel with not less than three and a half fathoms; and when the easternmost point of Governor's Island bears **N.** ½ **E.**, **W.** ¼ **N.** will lead safely past the red buoy on Governor's Island Point and into the Main Ship Channel. At low water these courses will not be necessary, as the flats will show on each side, and it is only necessary to keep the middle of the passage to pass safely through.

Sailing vessels must not attempt the passage through Shirley Gut and thence into the harbor, as it is fit only for steamers. The sharp turn at Deer Island North Point buoy is so abrupt that great care has to be exercised even by steamers in making it; and the velocity of the tidal current, both of flood and ebb, is such as to render the passage at all times one of danger. None but those well accustomed to threading its windings ever attempt it; and the above directions are given only as a part of the description of Boston Harbor, and not as a guide to strangers.

GOVERNOR'S ISLAND CHANNEL.

This channel, which is only fit for steamers, begins at the eastern end of Governor's Island Flats, and runs in a **WNW.** direction, between Governor's Island and Apple Island, for a little over a mile and a half. Then, turning abruptly to the southward, it runs between Bird Island and Governor's Island into the Main Ship Channel, which it joins a little above The Upper Middle. It is crooked at its western end and narrow at both ends; but a steamship can carry not less than nineteen and a half feet at mean low water throughout its entire length up to the East Boston wharves. It is very well buoyed,—there being but one danger left unmarked, and that is easily avoided by careful attention to the courses and sailing-lines laid down.

DANGERS

IN APPROACHING AND ENTERING BOSTON HARBOR BY GOVERNOR'S ISLAND CHANNEL.

After passing Deer Island Point Beacon the course leads to the northwestward for the black buoy on Governor's Island Flats. The first danger encountered on this course is The Middle Ground, an extensive shoal, lying **W NW.** and **E SE.**, which occupies the very middle of the passage, dividing it into two narrow channels with nineteen and a half feet water in each,—the western channel only being buoyed. A depth of from fourteen to seventeen feet at mean low water is found over this shoal, except at its western end, where there is only seven feet. It is nearly half a mile long between the lines of three fathoms, and is marked by two red spar-buoys,—one (No. 2) on its southeastern end and the other (No. 4) on its western end.

The Middle Ground.

The black spar-buoy met with on the southwestern side of the entrance is on Governor's Island Flats,—extensive shoals lying off the eastern shore of Governor's Island, from which they extend **E SE.** for about a mile. They are bare at low spring tides throughout their entire length; and between them and the western end of The Middle Ground lies the southern entrance to the Governor's Island Channel. The buoy, which is marked No. 1, is placed in twenty feet on the northern side of the eastern point of this shoal, and vessels must pass to the northward of it. When nearly up with it a red spar-buoy will be seen about a quarter of a mile to the northward. This is on Apple Island Flats, which surround Apple Island and extend to the southeastward about eleven hundred yards. They are dry at low water nearly to the buoy (No. 6), which is placed in fourteen feet on their southeastern point,—marking the northern side of the channel,—and vessels must pass to the southward of it.

Governor's Island Flats.

Apple Island Flats.

From this point the course of the channel is **NW.** by **W.** ¼ **W.**, between Apple Island Flats on the north and Governor's Island Flats on the south. At low water the limits are marked as by a wall, but at other times of tide it is not so easy to keep in the best water. To do this the buoy on Apple Island Flats must be left to the northward about two hundred and seventy-five yards, and a **NW.** by **W.** ¼ **W.** course leads up the middle of the channel with not less than four fathoms water.

On the course up the channel, on approaching the northeastern point of Governor's Island there will be seen, on the northern side of the channel, another red spar-buoy, which is on the West Spit of Apple Island Flats. These flats, which, as before mentioned, surround Apple Island, extend to the westward from it for half a mile, and are dry at low water to within one hundred yards of the buoy. The buoy is marked No. 8, placed in eighteen feet on the southern side of the western extremity of the shoal, and may be approached quite closely. Vessels must pass to the southward of it, and there will then be seen nearly ahead, and three-eighths of a mile off, (about seven hundred yards,) a black spar-buoy. This is on the North Point of Governor's Island Flats, and is intended to mark the southern limits of the passage at this point. These flats make off from the northern side of the island for a quarter of a mile, but there are soundings of twelve, thirteen, and fourteen feet outside of them all the way to the buoy, which is in fifteen feet at mean low water between five and six hundred yards from the shore. It is marked No. 3, and is placed on the northern extremity of the shoal; and from the buoy on Apple Island Flats it bears **NW.**, seven hundred yards distant.

W. Spit of Apple Island Flats.

N. Point of Governor's Island Flats.

Vessels must pass to the northward of buoy No. 3 to go in the best water, and an abrupt turn is then made to the westward towards the northern end of Bird Island, with a red spar-buoy on the northern side of the channel, about three hundred and fifty yards off, and a black spar-buoy on the southern side, about the same distance. The former is on Noddles Island Shoals.

Noddles Island is almost entirely occupied by East Boston, and is an island of very irregular shape, lying on the southern side of Chelsea River. A large bay, full of flats with narrow slues leading through and among them, is formed by the great curves of the shore between this island and Point Shirley; but is, however, at present of no commercial importance. These flats extend to the northern edge of the Governor's Island Channel, and it is on the southern point of one of these, making off from Noddles Island, and which is dry at ordinary low water, that the buoy is placed. It is marked No. 10 and placed in eighteen feet water on the edge of the channel.

Noddles Island Shoals.

Almost exactly midway between buoy No. 10 and the black spar-buoy on Glades Flats (to the southward) there is a shoal spot with four feet at mean low water, which is not buoyed, and is exactly in the way of vessels bound through this channel. This is the most formidable obstruction in the whole length of the passage, but is fortunately very small, and is easily avoided by keeping close to the red spar-buoy on Noddles Island Shoals or to the black buoy on Glades Flats. The latter will be seen on the eastern side of the passage, nearly in range with another of the same color some distance to the southward. The channel turns abruptly at this point and runs in a nearly **S SW.** direction.

Four Feet Shoal.

Glades Flats, which make off from the northwestern end of Governor's Island in a **NW.** by **N.** direction for four hundred yards, are bare at low water and rocky. The buoy is marked No. 5, and is placed in four fathoms about one hundred yards **NW.** from the bare spit. It may be passed close-to, leaving it to the eastward, and the course continued passes between the red and the black buoys seen ahead. The red spar-buoy which is first met with is on the southeastern point of Bird Island Flats. **Bird Island** lies on the western side of this channel and is covered at high water. There will be seen an iron spindle with a cage on top, both painted red, on the southeastern point of the island, about seventy-five yards to the northward of the buoy. This is called **Bird Island Beacon**, and there is no passage between it and the buoy except for vessels of very light draught. The buoy marks the termination of the shoal water which makes off to the southward from the island, is marked No. 12, and is placed in two fathoms at low water. Just to the southward of it is a red spar-buoy (No. 14), which is one of the guides for the Main Ship Channel.

Glades Flats.

Bird Island Flats.

Give the buoy on Bird Island Flats a berth to the westward,—passing midway between it and the black spar-buoy which lies off the western end of Governor's Island, and which, when abreast of the former, will be seen a little to the eastward of the course. This buoy is on the northwestern side of Governor's Island Shoal,—the name given to the shoal ground making off from the western end of Governor's Island. It has from two to five feet at low water upon it, and extends in a westerly direction for nearly four hundred yards. The buoy (No. 7) is placed on the eastern edge of the channel, and vessels must pass to the westward of it. Here the Main Ship Channel unites with the Governor's Island Channel; and about five-eighths of a mile to the westward (twelve hundred yards) will be seen the black nun-buoy on Slate Ledge. Now follow the directions given for the Main Ship Channel, turning when abreast of the buoy on Governor's Island Shoal, and steering exactly for the State House dome until you are well clear of the flats on the southern side of Bird Island, when haul up for the wharves on either side.

Governor's Island Shoal.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BOSTON HARBOR BY GOVERNOR'S ISLAND CHANNEL.

I. ***From the Main Ship Channel.***—This channel may be entered either through Broad Sound or from the Main Ship Channel. Coming in by the latter, continue the **NW.** course for Deer Island Point Beacon until you are past Nix's Mate and Long Island Light-house bears **W SW.**, with six and a quarter fathoms water, when steer **NW.** by **W.** $\frac{1}{2}$ **W.** for the southern end of Governor's Island. On this course there will not be less than four and a half fathoms, and the two red spar-buoys marking The Middle Ground will soon be seen a little to the northward. Continue the course until the middle of Apple Island bears **N.** by **W.** $\frac{1}{4}$ **W.**, with five fathoms water, when the course for the island will lead safely through between The Middle Ground and Governor's Island Flats, carrying not less than nineteen and a half feet water. When abreast of the black buoy on the northern side of these flats steer **NW.** by **W.** $\frac{1}{4}$ **W.**,—having Deer Island Point Beacon directly astern and the red spar-buoy on the western spit of Apple Island Flats nearly ahead. On this course there is nothing less than three and a half fathoms. When fairly past the buoy off Apple Island Flats steer **NW.** by **N.**, carrying not less than three and a half fathoms, until the State House dome bears **W.** $\frac{1}{4}$ **N.** and the red spar-buoy on Noddles Island Shoals is in range with it. Steer for the dome (keeping the range) until you are past the black spar-buoy on the North Point of Governor's Island Flats and Bird Island Beacon bears **SW.** $\frac{1}{2}$ **W.** Steer for the beacon until you are abreast of the black spar-buoy on Glades Flats, when steer **SW.** by **S.** $\frac{1}{2}$ **S.** for the black buoy on Governor's Island Shoal, passing to the southeastward of the red spar-buoys on Bird Island Flats, and carrying not less than nineteen and a half feet water. When past the black buoy an Governor's Island Shoal, steer **W.** $\frac{1}{4}$ **N.** until Bunker Hill Monument bears **NW.** $\frac{1}{4}$ **N.**, when steer for it if bound to East Boston; or steer **NW.** by **W.**, and anchor on the edge of the flats off Boston.

If the tide is up a little.—Continue the course **NW.** for Deer Island Point Beacon (in range with the western end of Apple Island) until you are within two hundred and fifty yards of the former. Now steer **W.** $\frac{1}{4}$ **N.** for two hundred and fifty yards, (an eighth of a mile;) when the beacon will bear **N NE.**, the depth will be nine fathoms, and Long Island Light-house will bear **S SW.**,—the bearings changing rapidly. The course is now **NW.** $\frac{1}{4}$ **W.**, which will lead through the eastern channel, between The Middle Ground and Deer Island Flats, with not less than nineteen and a half feet, and the red spar-buoy on Apple Island Flats will soon be seen directly ahead and open to the westward of Apple Island. Follow this course (keeping the buoy open) carrying not less than three and a quarter fathoms,

until the red spar-buoy on the western side of The Middle Ground and the red nun-buoy on State Ledge are in range on a bearing of about W. by S. Now steer NW. by W. ½ W. up the passage, heading for the red buoy on the West Spit of Apple Island Flats. When abreast of it steer NW. by N., and follow the directions for this channel, given above. *Sailing Directions--Governor's Island Channel.*

In this passage, if the first course in (NW. ¼ W. for the buoy on Apple Island Flats) can be made good, there will be at mean low water not less than nineteen feet; but in all probability a vessel will be set to the eastward or the westward by the tide, and have only fifteen or sixteen feet. This channel, therefore, is not recommended to steamers of heavy draught unless the tide be up.

II. *From the South Channel.*—Vessels entering by this channel pass Deer Island Point Beacon as usual and bring it to bear SE. by E. ¼ E., and steer NW. by W. ¼ W., keeping it over the stern for a range. Continue this course until you are abreast of the northeastern end of Governor's Island and up with the red spar-buoy on the West Spit of Apple Island Flats, when steer NW. by N. and follow the directions given above.

GANGWAY PASSAGE.

This narrow channel, which is commonly known as **The Gangway**, leads along the western shore of Boston Bay from Scituate to the northward,—threading the intricate passages among the Cohasset Rocks. Although there is good water through its entire length it is used only by vessels of light draught, and by them only when piloted by an experienced pilot. No stranger should ever attempt this passage even by day; it would be impossible by night.

From Scituate to Cohasset Entrance the shore is guarded by many bare and sunken ledges lying at various distances from the land,—dangerous in the extreme, and many of them not buoyed. To thread the channels between these requires an experienced pilot, and, since Scituate light has been extinguished, few of these dare attempt the passage at night.

The shores from Scituate to Strawberry Point are of moderate height, undulating and dotted here and there with trees; and a few houses are seen now and then. Scituate Entrance lies about four miles and a half S. by E. ⅝ E. from Minot's Ledge Light-house and three miles and three-quarters SE. by S. ½ S. from Strawberry Point. The tower, which is the only conspicuous object, is situated on the northern side of the entrance, but the light has been discontinued,—the tower being left as a day-mark.

It is said that the fishermen who trade to Boston in the summer maintain a light on this tower at their own expense, to enable them to come through The Gangway at night.

DANGERS

IN APPROACHING AND ENTERING BOSTON HARBOR BY THE GANGWAY PASSAGE.

Although no stranger should ever attempt this passage, a description of the approaches to Boston would not be complete without a mention of the numerous rocks and ledges which obstruct it. After passing Scituate Tower the shore should not be approached nearer than three-quarters of a mile to avoid Long Ledge, a dangerous ledge making off from the shore in a NE. ½ N. direction for three-eighths of a mile, and bare at low water. It is not buoyed, but almost always shows itself by breakers. When past it the above rule must be observed until the entrance to The Gangway is reached, as there are several sunken ledges lying well off shore. Of these, among the most remarkable as well as the most dangerous are the Cowen Rocks, a mile and three-quarters above Scituate Tower, a mile and a quarter above Long Ledge, and three-eighths of a mile (seven hundred yards) from shore. They are a dangerous group on the edge of the three-fathom line,—being partly bare and having in places from two to six feet at mean low water. They are not buoyed, but the course usually sailed leads well to the eastward of them. *Long Ledge.* *Cowen Rocks.*

As this channel, however, leads close alongshore, it is also necessary in the highest degree to guard against the extensive and dangerous Stellwagen Ledges, which must be left to the eastward. They are numerous detached rocks, with from nine to eighteen feet at mean low water, extending in a chain from Davis' Ledge in a direction nearly S. to within a mile and a half of Scituate Tower,—a distance of nearly two miles and a half. They are all surrounded by good water, and are not buoyed, with the single exception of Davis' Ledge; but they break with great violence in easterly weather, and at such times should not be approached under any circumstances. Scituate Tower bearing S., clears these ledges, passing to the eastward of them; but those using The Gangway pass to the westward. One of the most dangerous of these rocks, which has but seven feet at lowest tides, lies five-eighths of a mile (twelve hundred yards) NE. of the Cowen Rocks and two miles N. by W. ½ W. from Scituate Tower. The course leads nearly a quarter of a mile inshore of it. *Stellwagen Ledges.*

Five-eighths of a mile N. by W. from Cowen Rocks and half a mile from shore lies a detached ledge, called Sunken Ledge, but why so called is not known, as it is bare at low water. There is from five to seven fathoms on all sides of it, and it is not buoyed; and when *Sunken Ledge.*

Smith's Rocks. past it Smith's Rocks are approached. These are a group of bare rocky islets, forming the eastern end of a long line of bare and sunken ledges making off in an easterly direction from the shore just below The Glades to a distance of half a mile, and are five hundred yards to the northward of Sunken Ledge. These rocks are surrounded by shoal water, but are boldest-to on their eastern side. The easternmost rock is a small islet, called **Entrance Rock**, which is quite bold-to, and may be safely approached; and vessels in passing it leave to the eastward, a quarter of a mile off, one of the Stellwagen Ledges, *with eleven feet at mean low water*. Just to the northward of this ledge lie the Colomore's Ledges, which are also part of the Stellwagen Ledges,—being a group of sunken rocks lying nearly three miles to the northward (**N.** by **W.** ½ **W.**) of Scituate Tower, one mile **SE.** by **E.** ½ **E.** from Strawberry Point, and a mile and three-eighths **S.** by **E.** from Minot's Ledge Light-house. They are not buoyed; and vessels using this passage pass to the westward of them and to the eastward of Osher's Rocks, which are bare at low water, and lie half a mile inshore of them. These rocks lie close in with the shore of The Glades,—being only three hundred yards off, and are not generally considered in the way by vessels using this channel. There is a small passage inshore of them, but they are not buoyed. A quarter of a mile **E.** from Osher's Rocks lies *a detached rock with fifteen feet* at mean low water upon it; but the courses pass to the eastward of it.

Colomore's Ledges.

Osher's Rocks.

After passing Osher's Rocks, Chest Ledge is next met with,—a bare rock, surrounded by shoals, lying one-third of a mile **SE.** by **E.** ½ **E.** from Strawberry Point, one mile **S.** by **W.** ½ **W.** from Minot's Ledge Light-house, and nearly three-quarters of a mile to the northward of Smith's Rocks. Though surrounded by shoals, there is a passage with twenty-two feet at low water between it and the shore, which is not, however, available except in the smoothest weather.

Chest Ledge.

Chest Ledge is not buoyed, but the courses pass to the eastward of it. About five hundred yards **E.** ¼ **N.** from it lies a detached pinnacle rock, called Mike's Ledge, and the channel leads between them. Mike's Ledge has six feet at mean low water, lies three-eighths of a mile **N.** by **W.** ½ **W.** from Colomore's Ledges and one mile **S.** ½ **E.** from Minot's Ledge Light-house, and the courses pass an eighth of a mile to the westward of it.

Mike's Ledge.

Tobias' Rock is the next obstruction met with after passing Chest Ledge, and is the southernmost of the group known as *Cohasset Rocks*. It is three hundred and fifty yards above Chest Ledge and a quarter of a mile **E.** of Strawberry Point. It is a bold bare rock, always out, and may be approached quite closely, but the sailing-lines pass to the eastward of it. When abreast of it there will be seen a bare rocky islet to the westward, lying about three hundred yards **N.** of Strawberry Point, called **Gull Island**. The channel leads between this and a dangerous ledge about five hundred yards to the eastward of it, called the West Willies. These, which are also a part of the Cohasset Rocks, are bare at low water, and lie a quarter of a mile to the northward of Tobias' Rock and five-eighths of a mile (twelve hundred yards) **S SW.** from Minot's Ledge Light-house,—forming a piece of shoal ground about an eighth of a mile square on the eastern side of the channel. A black spar-buoy (No. 1) is placed on the northwestern side of the shoal, and vessels going into Boston through this channel must pass to the *westward* of it notwithstanding its color, as it is painted and numbered for a channel leading from the eastward into Cohasset. This buoy is the first one met with by vessels bound to the northward through The Gangway.

Tobias' Rock.

West Willies.

East Willies. The East Willies lies about four hundred yards to the eastward of the dry rock on West Willies, and three-quarters of a mile **S.** ½ **W.** from Minot's Ledge Light-house. It is bare at low water and is not buoyed; and a passage with six fathoms leads between the two ledges.

When up with West Willies the course passes to the eastward of Gull Island and a line of ledges to the northward of it, some of which are always out. A quarter of a mile to the westward of these lies Sheppard's Ledge, bare at low water, and marking the south-eastern side of the entrance to Cohasset Harbor. A black spar-buoy (No. 3) is placed on its northwestern side, off what is known as *Jacques Rock;* but there is no passage between it and Gull Island, nor between Gull Island and Strawberry Point.

Sheppard's Ledge.

When past Gull Island the entrance to Cohasset opens to the westward, and to the eastward will be seen a red spar-buoy. This is on the southern side of Enos' Ledge, which is not in the Gangway Passage, but on the northern side of the eastern entrance to Cohasset, which leads between this ledge and the West Willies. It is a large ledge, lying nearly **E.** and **W.**, and dry at low water; and from Minot's Ledge Light-house it bears **SW.** ½ **S.**, three-eighths of a mile distant. The buoy is placed on the southern side of the ledge, and must not be approached by vessels using The Gangway; for about three hundred and fifty yards to the westward of it lies a bare rock, surrounded by shoal water, known as East Shag Ledge. This ledge lies on the eastern side of The Gangway, half a mile **SW.** ½ **W.** from Minot's Ledge Light-house, and must receive a berth of one hundred and fifty

Enos' Ledge.

East Shag Ledge.

yards. It is not buoyed,—the bare rocks serving as a guide; and when abreast of it two spar-buoys will be seen ahead. The black buoy is on the western point of West Hogshead Rock, dry at low water, and lying **W.** ¼ **S.** from Minot's Ledge Light-house, a little over half a mile distant. An eighth of a mile to the eastward of it is another rock, bare at low water, called *Hogshead Rock;* but both form one large ledge, lying nearly **E.** and **W.**, and about three hundred and fifty yards long. The same distance still farther to the eastward lies another rock, bare at low water, called *East Hogshead Rock*, and surrounded by deep water. The buoy is a black spar (No. 1), and is placed in sixteen feet on the western edge of the ledge,—marking the eastern limits of the Main Channel into Cohasset. Vessels bound to Boston through The Gangway must pass to the westward of it. ***West Hogshead Rock.***

On approaching the buoy on West Hogshead Rock a large bare rock, called West Shag, will be left to the westward; and from the buoy this rock bears **NE.** by **E.** ¼ **E.**, six hundred yards distant. West Shag is shoal in its approaches, and bare at low water on its western side for nearly four hundred yards; but on its eastern side it is pretty bold-to. ***West Shag.***

The red spar-buoy which will be seen to the westward on coming up with West Hogshead Rock is on the western side of the northern entrance to The Gangway, and marks the point where it joins the main approach as well as the Main Channel into Cohasset. It is on the northeastern end of The Grampuses, two large ledges, bare at low spring tides, lying on the northern side of West Shag, and about three-eighths of a mile (six hundred and fifty yards) to the westward of West Hogshead Rock buoy. There is a depth of six feet between the two ledges. The buoy is marked No. 2, but vessels bound to Boston through The Gangway pass to the eastward of it, as it is painted and numbered for Cohasset Entrance. From Minot's Ledge Light-house it bears **W.**, seven-eighths of a mile; from the Glades House **N.** ¾ **W.**; and from the buoy on West Hogshead Rock **W.** by **N.**, a little over a quarter of a mile distant. ***The Grampuses.***

The Grampuses form the northern extremity of an extensive line of ledges extending in a **N NE.** and **S SW.** direction up the middle of Cohasset Harbor,—separating the approach into two channels. That to the eastward is called the **Main Channel**, and the western passage is known as **Brush Island Channel.**

When past the red buoy on The Grampuses the channel is clear to Harding's Ledge.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BOSTON HARBOR BY THE GANGWAY PASSAGE.

Vessels using this passage pass half a mile to the eastward of Scituate Tower,—steering **N NW.** for Minot's Ledge Light-house. This course will lead past Long Ledge in not less than four and a half fathoms. When the tower bears **S.**, one and a third miles distant, steer **NW.** ¼ **W.** for about a mile, carrying not less than six and a half fathoms, until Minot's Ledge Light-house bears **N.** ⅞ **W.** and Scituate Tower **S.** by **E.** ⅞ **E.**; when the depth will be seven fathoms, and **N.** by **W.** ⅛ **W.** will lead safely through the passage, passing to the eastward of Entrance Rock, to the westward of Colomore's Ledges, to the eastward of Chest Ledge, and to the westward of Mike's Ledge. When between the two latter, in six and a half fathoms, with Minot's Ledge Light-house bearing **N.** ¼ **E.**, one mile distant, and the middle of Gull Island **NW.** ¾ **W.**, five-eighths of a mile distant, steer **NW.** ⅝ **N.**, which will lead, with not less than four and a half fathoms, past Gull Island and West Shag, and nearly up with the red buoy on The Grampuses, carrying not less than three fathoms at low water. Vessels must pass to the eastward of the buoy on The Grampuses and steer **NW.** ½ **N.** for the bell-buoy on Harding's Ledge, carrying not less than seven and a half fathoms. When up with the bell-buoy, **NW.** by **W.** will lead into the Main Ship Channel with not less than four and a half fathoms. On this latter course, when Boston Light-house bears **N.** ⅛ **W.**, steer **W.** for the southern extremity of George's Island, and follow the directions given for the Main Ship Channel on page 584. *Or*, when up with the red buoy on The Grampuses, as before, steer **NW.** ½ **W.** for the eastern cliff of Point Allerton. This course leads, with not less than four fathoms, half a mile inshore of the westernmost rock of Harding's Ledge, and when the beacon bears **E.** ¾ **N.** and Boston Light-house **NW.** by **N.** ½ **N.**, with four fathoms, "stony bottom," steer for the latter until Narrows Light-house bears **W.** by **N.** ¾ **N.** Now steer **W.** by **N.** for the black buoy on the northern end of Centurion Rocks, carrying not less than three and a half fathoms. Pass to the northward of this buoy and steer **NW.** ½ **W.**, following the directions given for the Main Ship Channel on page 584.

The above courses pass nearly six hundred yards to the eastward of Cowen Rocks; four hundred yards to the eastward of Sunken Ledge; a quarter of a mile to the westward of the nine feet rock on Stellwagen Ledges; two hundred yards to the eastward of Entrance Rock; an eighth of a mile to the

Sailing Directions--Gangway Passage. westward of Colomore's Ledges; three hundred and fifty yards to the eastward of the dry part of Chest Ledge; two hundred yards to the westward of Mike's Ledge; an eighth of a mile to the eastward of Tobias' Rock; two hundred yards to the westward of the bare rock of West Willies; two hundred yards to the eastward of Sheppard's Ledge; two hundred yards to the westward of the bare rock on East Shag; an eighth of a mile to the eastward of West Shag; three hundred yards to the westward of the black buoy on West Hogshead Rock; and about fifty yards to the eastward of The Grampuses. They pass half a mile inshore of Harding's Ledge Beacon, and three hundred yards to the northeastward of the black buoy on Point Allerton Bar.

This passage, as before remarked, must never be attempted by strangers; but it is of great convenience, however, to the fisherman and light coasters, who are familiar with its dangers.

BLACK ROCK CHANNEL.

This is a narrow channel which leads from the Main Ship Channel in a **NE.** direction, between Lovell's Island and Narrows Light-house, into Hypocrite Channel. It is dangerous, and is never used by large vessels unless there is ice in The Narrows. The southeastern side of this passage is marked by Spit Bar; the northwestern side by the shoals on the eastern side of Lovell's Island; and strangers must not attempt it.

DANGERS

IN THE BLACK ROCK CHANNEL OUT OF BOSTON HARBOR.

In leaving the Main Ship Channel and bound out by the Black Rock Channel, the first danger met with is Whiting's Ledge, which has about six feet at lowest tides, and lies nearly in the middle of the passage, with the ebb tide setting strongly over it. It is not buoyed; but the following bearings were taken upon it: Narrows Light-house (with False Spit Beacon just open to the eastward) **SE.** by **S.** ¾ **S.**, an eighth of a mile distant; and Black Rock **E.** by **N.**, a little over six hundred yards distant. To avoid it keep the eastern side of the passage aboard; and in doing so care must be taken not to go ashore on Spit or Brewster Bar, (see also page 580.) This long spit makes off from the Great Brewster in a westerly direction to Narrows Light-house,—a distance of nearly one mile. It is dry at low water and tolerably bold-to, and is not very dangerous to vessels using this channel unless they hug the eastern side too closely while endeavoring to avoid Whiting's Ledge. On the northern edge of this spit, about five hundred yards **NE.** ¾ **E.** from Narrows Light-house, lies a prominent rock or islet, called **Black Rock**, which gives the name to the channel and serves also as a guide to keep vessels off the spit.

Whiting's Ledge.

Spit or Brewster Bar.

From the eastern side of Lovell's Island shoal water extends to the northeastward for three-quarters of a mile,—there being only twelve feet at low water at that distance from the island. The spit is bare at low water for an eighth of a mile **NE.** of the southern end of the island, and there is less than six feet a third of a mile to the eastward of the eastern shore. The ebb tide sets on to these shoals, and vessels bound out must be careful, after passing Whiting's Ledge, not to go to the westward of Green Island bearing **NE.** The northeastern point of these shoals is three-quarters of a mile **E.** by **N.** ½ **N.** from the northeastern point of Lovell's Island, and about two-thirds of a mile **W.** by **N.** from the southern end of Calf Island.

Shoals East of Lovell's Island.

The western shore of Calf Island is bold-to and may be approached quite closely.

SAILING DIRECTIONS

FOR THE BLACK ROCK CHANNEL OUT OF BOSTON HARBOR.

Coming down the Main Ship Channel on the **SE.** ½ **E.** course, when about midway between the southeastern end of Lovell's Island and Narrows Light-house, with the southeastern angle of Fort Warren bearing **SW.**, steer **NE.**, (keeping that range,) with Green Island a very little to the northward of the course. This clears Whiting's Ledge, and should be continued until Little Calf Island bears **S.** by **E.**, three hundred yards off, when the vessel will be in the Hypocrite Channel, about five hundred yards **SW.** from Green Island, and should steer **E.** or **E.** ½ **S.**, which will lead clear of everything. Not less than four fathoms is found on these courses.

If the tide be flood, mariners must not depend upon the **NE.** course to lead clear of Whiting's Ledge. The course made good leads within thirty yards of that ledge, towards which the flood tide sets. In such a case, keep the eastern side of the channel aboard (guiding the courses by Black Rock) until past the ledge, when haul up for Green Island and proceed as before directed. This channel is, however, seldom used except on the ebb tide.

Both flood and ebb tides set strongly through this channel,—the former setting nearly in the direction of the channel and the latter more towards the eastern side. In either case, however, care must be taken not to be set on to Whiting's Ledge. A good rule is to pass close to Narrows Light-house and steer to the northeastward, keeping Black Rock open to the eastward; but no stranger ought to attempt this passage, as a pilot can always be obtained in Boston.

BACK OR WESTERN WAY.

This channel is used on the ebb, in light winds, to avoid being set out into the Sound at Nix's Mate, or into Black Rock Channel at the southeastern end of Lovell's Island. The entrance is between Thompson's Island and The Spectacles, whence it passes between the southwestern end of Long Island and Moon Head; then, turning abruptly to the northeastward, passes along the eastern shore of Long Island, between it and Rainsford's Island; and thence towards George's Island into Inner Nantasket Roads. With care, this channel is safe even for strangers.

When abreast of the black buoy on Castle Rocks the entrance will bear **S SE.**; and a little to the westward of this bearing will be seen the precipitous face of Thompson's Island, which lies on the western side of the entrance to the Back Way and on the eastern side of the entrance to Neponset River. This island lies **E NE.** and **W SW.**, is a mile long, and the group of large houses on its summit is the **Farm School**, and occupies the middle of the island where the land rises to a height of seventy-five feet,—nearly all the rest of the island being low land. It is surrounded by flats and shoals, which, on its eastern side, extend off to a distance of three-quarters of a mile with less than six feet at low water; but on its western side it is much bolder, and may be approached (if bound into Neponset River) within three hundred and fifty yards. **Thompson's Island.**

To the southward of Thompson's Island lies the peninsula of Squantum; and from the southeastern end of the former a long and narrow sand-spit extends nearly **S.** by **E.** for five hundred yards,—its southern end being within seventy-five yards of Squantum. Thus the island is nearly joined to the mainland and there is no passage between them at low water. (See also page 577.)

On the eastern side of the entrance will be seen the Spectacle Islands, or **The Spectacles**, which will be nearly in range from this point of view. They are two islands of moderate height, bare of trees, lying **N.** and **S.** from each other, and joined at low water by a dry bar. The northern island lies nearly **E.** and **W.**, and is seven hundred yards long and sixty-five feet high, with cliff-like faces worn by the the action of the water. On coming up with it there will be seen a group of houses on its southern end, where there is a low sand point. The southern island, on approaching it, will be seen to be equally bare with the north Spectacle, but not so steep, although its height at the summit is the same. The northern face of this island is as precipitous as that of the north Spectacle, but this side is not visible from the Back Way; and on the southern side the shore is low and sandy. Here there is a wharf making out to the edge of the channel from the western shore of the south Spectacle near its southern end. **Spectacle Islands.**

When past The Spectacles, on the **S SE.** course, Moon Island will appear on the western side of the channel and Long Island on the eastern side. Moon Island cannot fail to be recognized by reason of its high, bare, precipitous head, called **Moon Head**, which forms its eastern end. Viewed from near The Spectacles it will look like an extension of the eastern face of Squantum. Moon Island lies **E.** by **N.** and **W.** by **S.** and is three-quarters of a mile long. The head, which is eighty-five feet high, forms the principal part of the island; as to the westward of its base there is nothing but a low sand-spit extending about **W.** over a third of a mile. At low water this is joined to the peninsula of **Squantum**, whose rugged hills appear to the westward of Moon Island. **Moon Island.**

Opposite to Moon Head appears, on the eastern side of the channel, the southwestern extremity of Long Island, presenting a bare hill fifty feet high, with precipitous face. To the northward of this hill the surface slopes regularly almost to sea-level; rises again to a height of twenty or thirty feet; then falls again, and so continues, presenting a series of elevations and depressions,—the hills varying from fifty to ninety feet in height. The highest land on the island is about midway between its northern and southern ends, where a smooth green hill rises to a height of ninety feet. On the northern slopes of this hill will be seen,—on passing to the southward of Spectacle Islands,—the hotel buildings; and here is a large wharf, used as a steamboat landing during the summer season. Still farther to the northward rises **Long Island Head**, eighty feet high, with the light-house on its summit. It will appear like a separate island,—the land between it and the base of the hill upon which the hotel is built being so low as to be scarcely perceptible. **Long Island.**

The channel passing between Moon Head and Long Island leads directly towards a bare precipitous head with water-worn face, behind which rises a still higher hill, smooth and grassy, but not so steep. The high hill is **Quincy Great Hill**, and the smaller head in range with it is **Nut Island**. The latter, sixty feet high, is two miles to the southeastward of Moon Head, and lies on the eastern side of Quincy Bay.

To the southward and a little to the westward of Nut Island, and about three-quarters of a mile off, will appear a low, bare, rocky islet. This is Hangman's Island, which lies in the middle of the entrance to Quincy Bay, about midway between Moon Island and Nut Island, and is surrounded by shoals. To the northeastward of this island and in range with the western end of Peddock's Island will appear a large beacon of open-work, with a granite base, and surmounted by a staff and cage. This is **Sunken Island Beacon**, on **Sunken Island**, and is **Hangman's Island.**

one of the guides to the approaches to Weymouth Fore River. Neither this ledge nor Hangman's Island is in the way of vessels bound out by the Back Way.

When well past the southwestern end of Long Island the channel turns abruptly to the northeastward along the eastern face of that island, between it and Rainsford's Island. This will appear as a low island nearly bare of trees, but having several groups of buildings upon it and a long wharf making off from its southern end. The buildings belong to the **Quarantine Station**, which was formerly established upon this island, and are partially concealed by trees planted around them for ornament and shade. To the southward of the western end of the island a long ledge of bare rocks will be seen extending in a southerly direction a considerable distance. These are the **Quarantine Rocks**, and are among the principal obstructions to the entrance to Weymouth.

Rainsford's Island.

The course to the northeastward leads directly towards the western end of **Gallup's Island**, which from this point of view will show as low, gently-sloping land, with a couple of houses close to the shore and two small wharves making out to the southward and westward. Nix's Mate Beacon will appear a little to the northward of the course, and Long Island Light-house still farther to the westward.

When past the eastern end of Rainsford's Island the channel turns to the eastward,—the course leading directly for the southern angle of Fort Warren on George's Island until within three-eighths of a mile of it, when it turns to the southward, leading directly towards a high bare hill, called **Nantasket Hill**,—on the western slopes of which will be seen the village of **Hull**. This course leads into Nantasket Roads, after which the directions for the Main Ship Channel must be followed.

DANGERS

IN THE BACK OR WESTERN WAY OUT OF BOSTON HARBOR.

Scant nine feet at mean low water is all that can be taken through this channel,—the shoalest part being to the southward of Spectacle Islands, between them and Moon Head. The first obstruction met with, after passing the black buoy on Castle Rocks, is known as Thompson's Island Flats, which extend off from the northeastern end of Thompson's Island to the eastward for nearly three-eighths of a mile with less than six feet at mean low water, and that depth is found at a distance of three-quarters of a mile from the southern end of the island. They are not buoyed, and to avoid them the Spectacle Island shore must be kept best aboard. Vessels must be careful not to approach the Thompson's Island shore.

Thompson's Island Flats.

When abreast of the southern end of Spectacle Islands there will be seen well to the eastward of the course, and about half a mile off, a red spar-buoy. This is on the eastern end of Sculpin Ledge, a long reef with many rocks awash, lying on the eastern side of the channel, about midway between Long Island and Spectacle Islands. The buoy is no guide for the Back Way, being placed as a guide to **Sculpin Ledge Channel**,—as the passage between Long Island and The Spectacles is called. Sculpin Ledge lies **W NW.** and **E SE.**, is nearly three hundred yards long, and its western end bears **SE.** by **S.** from the wharf on the south Spectacle, six hundred yards distant. There is no buoy on this end of the ledge, and to avoid it vessels must not go to the eastward of the line joining the southwestern end of Long Island and the wharf on the south Spectacle.

Sculpin Ledge.

From Moon Head to the eastward a flat extends about an eighth of a mile with less than six feet water. It is called *Moon Head Flats*, and is not buoyed, but the sailing-lines lead well clear of it.

The next danger met with is known as Quarantine Rocks, which extend in a **S.** by **W.** direction from the western end of Rainsford's Island for three-eighths of a mile, are mostly bare at low water, and are not marked in any way. They are, however, not dangerous to vessels using the Back Way unless beating to windward, in which case, to avoid them, keep Long Island Light-house open to the westward of Rainsford's Island.

Quarantine Rocks.

When past Rainsford's Island and steering towards Fort Warren there will be seen, on the southern side of the channel, a black nun-buoy.* This is on Hospital Shoal, an extensive ledge, lying in a **W NW.** and **E SE.** direction, between Rainsford's and George's islands. It is three-eighths of a mile long, and has upon it a small rock, with five feet at low water, called *Wilson's Rock*. The western end of the shoal bears from the western end of Rainsford's Island **E NE.** and from Long Island Light-house **S.** by **E.** $\frac{3}{4}$ **E.** The buoy is of the third class, placed in eighteen feet off the eastern end of the shoal, and bears from the southern end of George's Island **W.**, half a mile, and from Long Island Light-house **SE.** by **S.** $\frac{1}{2}$ **S.**, one mile and an eighth distant.

Hospital Shoal.

After passing the buoy on Hospital Shoal you will enter Nantasket Roads, and the course must be shaped either for the southern Centurion buoy or to pass between Toddy Rocks and Hunt's Ledge. *In the former case* steer **E NE.** for a red nun-buoy,* with a black nun-buoy* a short distance to the northward of it. The red buoy is on the southeastern end of Centurion Rocks, or *The Centurion*, (which have fourteen feet at mean low tides and twelve at low springs,) and bears from Narrows Light-house **SE.** $\frac{1}{4}$ **S.**, three-eighths of a mile, and from Boston Light-house **W.** by **S.** $\frac{1}{4}$ **S.**, one mile and an eighth distant. Vessels using this channel pass to the southward of the buoy close-to.

Centurion Rocks.

On passing the red buoy on The Centurion a nun-buoy,* painted red and black in horizontal stripes, is left to the southward a quarter of a mile off. This is on Hunt's Ledge, which lies on the southern side of the channel, about half a mile from the Nantasket shore, has fourteen feet at mean low water and from three to five fathoms on all sides. The buoy is *on* the rock. ***Hunt's Ledge.***

When past The Centurion buoy the course leads to the eastward, passing to the southward of a red spar-buoy. This is on Nash's Rock, a detached rock with thirteen feet at low water, lying in the middle of the channel. The buoy is placed in eighteen feet water on the southern side of the rock. It is intended to remove Nash's Rock by blasting to a depth of twenty-one feet at mean low water. ***Nash's Rock.***

After passing Boston Light-house the channel is clear to sea.

If intending to pass between Toddy Rocks and Hunt's Ledge, the course will be about **E.**, and there will be seen about three-quarters of a mile to the eastward a black nun-buoy* on the southern side of the passage, and a red and black nun-buoy* on the northern side. The latter is on Hunt's Ledge; the former on the northern end of Toddy Rocks. These rocks make off in a long line from the base of the Nantasket Hills and are bare at low water one-eighth of a mile from shore. The buoy on Toddy Rocks is a nun* of the second class, marked No. 1, and placed in three and a half fathoms on the northern side of the ledge. The channel leads directly between this buoy and that on Hunt's Ledge, and continues to the eastward towards Point Allerton, passing to the northward of the black nun-buoy on Point Allerton Bar. After passing this buoy there are no more obstructions and the channel is clear to sea. ***Toddy Rocks.***

SAILING DIRECTIONS

FOR THE BACK OR WESTERN WAY OUT OF BOSTON HARBOR.

From abreast of the black buoy on Castle Rocks steer **S SE.** for Quincy Great Hill, which will appear about four miles off. This course will lead, with not less than nine feet, between Thompson's Island and The Spectacles, passing to the eastward of Thompson's Island Flats and well to the westward of Sculpin Ledge. (It may be possible to see Nut Island in range with Quincy Great Hill and to recognize it by its bare precipitous head.) On this course, when **Bass Point** (the southeastern end of Long Island) is opened from behind the southwestern point on a bearing of **NE. by E. ¾ E.**, steer **SE.** for a quarter of a mile exactly for the summit of the hill on the southwestern end of Peddock's Island. On this course there will not be less than nineteen feet; and when the southwestern end of Long Island bears **N. ½ W.** and is in range with the eastern end of the north Spectacle, steer **NE. by E.** for the western end of Gallup's Island, passing between Rainsford's and Long islands and carrying four fathoms water. Continue this course until Long Island Light-house bears **N.** and the eastern end of Rainsford's Island is a little abaft the beam, bearing **S. by E. ½ E.**, when there will be three and three-quarter fathoms, and **E. by S.** must be steered for the southern angle of Fort Warren on George's Island. On this course the least water is three and a half fathoms. When within five hundred yards of the island, with the centre of Nantasket Hill bearing **SE. ½ E.**, steer for the hill until Narrows Light-house bears **N NE.**, when the depth will be seven and a half fathoms, and **E NE.** will lead you up to the southeastern buoy on The Centurion. When up with this buoy steer **E. ½ N.** to sea.

Or, on the **SE. ½ E.** course for Nantasket Hill, when Narrows Light-house bears **N NE.** and it is intended to pass between Toddy Rocks and Hunt's Ledge, steer **E.**, passing about midway between the two buoys in five and three-quarter fathoms. This course continued will carry you safely to sea.

PASSAGE BETWEEN LONG ISLAND HEAD AND NIX'S MATE.

There is a deep and unobstructed passage with not less than five fathoms leading between George's Island and Gallup's Island, and vessels passing up The Narrows on the flood-tide may, if the wind be light, be set through this passage. In such a case they will find good anchorage anywhere to the southward of Gallup's Island, or to the westward of George's Island. If such a vessel be of light draught, she may avail herself of a channel with ten feet at mean low water which leads to the northward, between Nix's Mate and Long Island Head, into the Main Ship Channel.

DANGERS

IN THE PASSAGE BETWEEN LONG ISLAND HEAD AND NIX'S MATE.

Designing to enter this channel from Nantasket Roads, the course leads towards the low land to the southward of Long Island Head, passing to the eastward of a black nun-buoy* marked No. 1.

This is on Hospital Shoal, a large ledge lying **W NW.** and **E SE.** between Rainsford's Island and George's Island,—*Wilson's Rock*, the shoalest part of it, having five feet at mean low water. The buoy is placed on the eastern side of the shoal and is half a mile **W.** of the southern angle of Fort Warren. When past it there are no dangers until you are near the western end of Gallup's Island, when there will appear, a little to the northward of the course, a red spar-buoy. This is on the *South Spit of Nix's Mate*, which is dry at low water, and extends from Nix's Mate Beacon in a **SE.** direction for a quarter of a mile to the buoy, which is marked No. 2. In passing the shoal the buoy is left to the eastward close-to, to avoid the shoals on the Long Island side.

Hospital Shoal.

SAILING DIRECTIONS

FOR THE PASSAGE BETWEEN LONG ISLAND HEAD AND NIX'S MATE.

From the buoy on the southeastern end of The Centurion steer **W SW.** until Narrows Light-house bears **N NE.**, when steer **NW. ½ W.** for the low land just to the southward of Long Island Head. On this course Nantasket Hill will be directly astern. Continue it until you are past George's Island, carrying not less than three and a half fathoms, and Deer Island Point Beacon bears **N.** by **W.** Now steer for the beacon, passing to the westward of the red buoy on the South Spit of Nix's Mate; and when fairly in the Main Ship Channel, with Long Island Light-house bearing **SW. ¼ S.**, steer **W. ½ N.** into President's Roads. Ten feet is the least water, and this is found between Nix's Mate and Long Island Head; but everywhere else there is over three fathoms.

SCULPIN LEDGE CHANNEL.

This channel, which leads from President's Roads into the Back or Western Way, is commonly used by vessels bound to Quincy and Weymouth, and is good for eleven feet at mean low water. The channel lies nearest to Long Island,—extensive shoals making off from the eastern shore of The Spectacles.

DANGERS

IN THE SCULPIN LEDGE CHANNEL—BOSTON HARBOR.

In coming into this channel from President's Roads, when abreast of Long Island Light-house there will be seen to the eastward of the course a black spar-buoy lying close in with the wharf near the hotel. This is on Wharf Rock, which lies to the westward of the wharf and has two feet at lowest tides. The buoy is marked No. 1, placed on the northwestern side of the rock in ten feet water, and vessels must pass to the westward of it. When past it, a red spar-buoy will be seen ahead about half a mile off. This is on Sculpin Ledge, an obstruction already described in the dangers in the Back Way as a long reef, awash in several places at low water, lying about midway between Long Island and The Spectacles and on the western side of this channel. The buoy is marked No. 2, placed in twelve feet water off the eastern end of the shoal, and vessels must pass to the eastward of it.

Wharf Rock. ***Sculpin Ledge.***

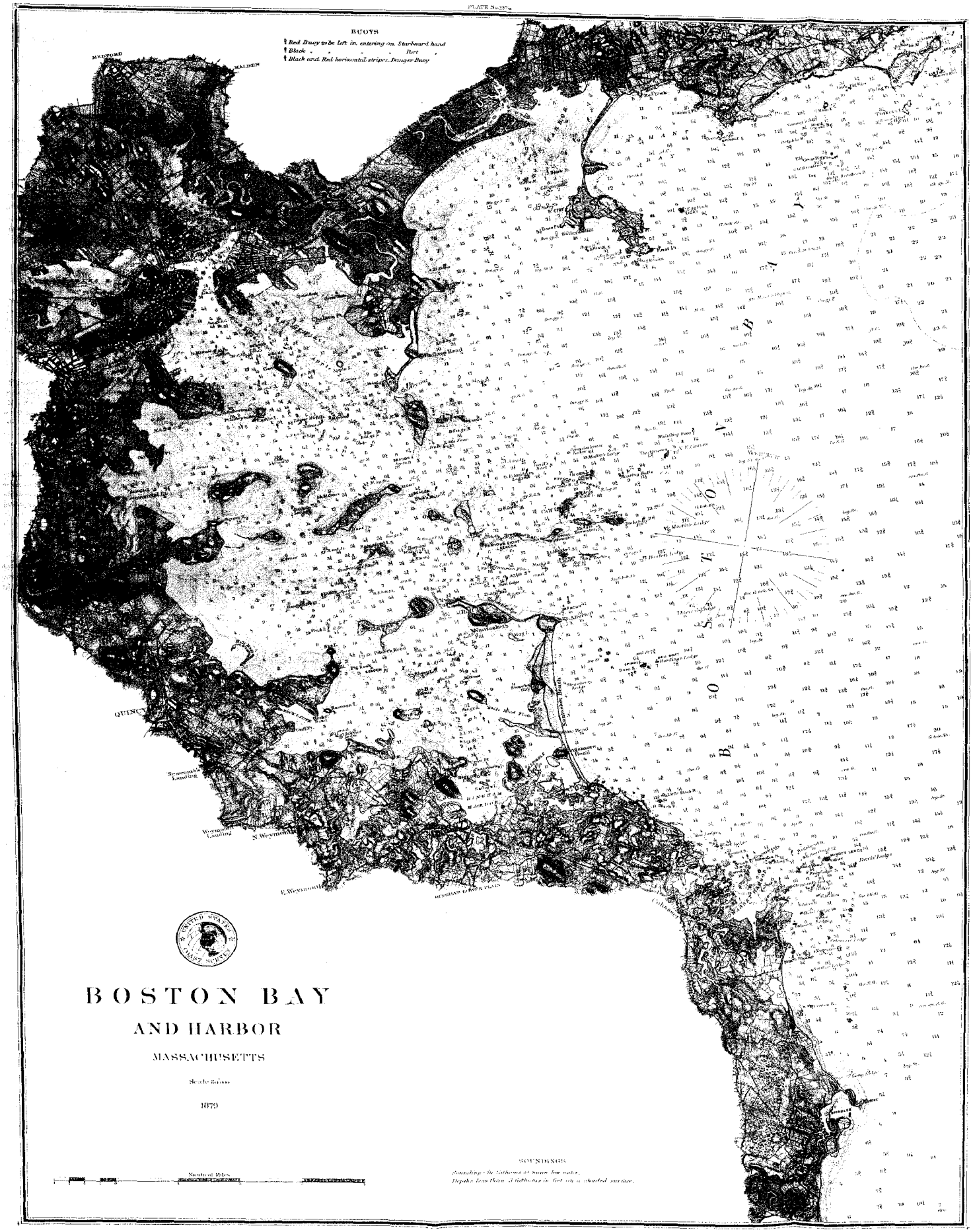
SAILING DIRECTIONS

FOR THE SCULPIN LEDGE CHANNEL—BOSTON HARBOR.

I. ***Coming from the Eastward.***—When Long Island Light-house bears **SE. ¾ S.** and Deer Island Point Beacon **E.** by **N. ¾ N.**, steer **SW.** by **S.**, carrying not less than three fathoms, until you are up with the red buoy on Sculpin Ledge, which must be left to the westward about fifty yards off, and **SW.** by **W. ½ W.** must be steered for the summit of Moon Head. On this course there will not be less than fourteen feet, and when you are within one-third of a mile (about six hundred and fifty yards) of Moon Head, with Quincy Great Hill bearing **S SE.** and the wharf on the southwestern point of The Spectacles **N.** by **W.**, you will have entered the Back Way, and must steer **S SE.** or **N NW.**, according as you are bound to Quincy or into the Neponset River. On this course there will not be less than eleven feet.

II. ***Coming from the Westward.***—When, on the course through President's Roads, Long Island Light-house bears **E SE.** and the eastern end of the north Spectacle **S.** by **W.**, steer **SE.** for the wharf near the hotel on the western side of Long Island. Continue this course, carrying not less than three fathoms, until you are within three hundred and fifty yards of the wharf, when steer **SW.** by **S.** for the red buoy on Sculpin Ledge and proceed as above directed.

PLATE No. 37.



BOSTON BAY

AND HARBOR

MASSACHUSETTS

Scale 80,000

1879

Nautical Miles

SOUNDINGS

Soundings in fathoms at mean low water.
Depths less than 3 fathoms in feet on a shaded surface.

FORT HILL CHANNEL.

This channel, which separates South Boston from Boston proper and leads into **South Bay**, has eight feet at mean low water. Its shores are lined with wharves, and it is crossed by no less than five draw-bridges; and vessels therefore must be towed in and out. The Harbor Commissioners design making extensive improvements in this channel,—one of the most important of which is a heavy granite sea-wall.

GENERAL REMARKS

ON THE APPROACHES TO BOSTON HARBOR.

In the entrance to Massachusetts Bay, and exactly in line between Cape Ann and Cape Cod, lies *Stellwagen's Bank*, about sixteen miles and a half long, with a depth of from nine to twenty fathoms. The bank lies almost exactly **N.** and **S.**,—its northern end being a little over sixteen miles to the southward of Thatcher's Island Light-houses and its southern end five miles to the northward of Race Point. At its southwestern extremity, which is a little over twenty-seven miles to the southeastward of Boston Light-house, is a spot with nine and a half fathoms,—the shoalest part of the bank; but the general depth over its area is from twelve to fifteen fathoms. Striking the northern part of this bank, in coming from the eastward, you will shoal your ground rapidly from thirty to nineteen fathoms, when Boston Light-house will bear **W. ⅛ S.**, and will be distant a little over twenty-two miles. Crossing the middle of the bank on a **W NW.** course, you will have from fourteen to sixteen fathoms, "coarse sand and black specks;" and here the bank is a little over four miles wide. But in coming from the southward and crossing the southwestern end of the bank, the soundings will decrease rapidly from twenty-five to twelve fathoms, "fine sand;" and you will get ten fathoms before leaving the bank,—Boston Light-house bearing **NW. by W. ¼ W.**, distant twenty-seven miles.

The bank is not specially prominent as a landmark, but is noted as a good fishing ground.

NEPONSET RIVER.

From Dorchester Point, the eastern point of the peninsula of South Boston, the shore of Boston Harbor runs to the westward a mile and a quarter, then turns to the southward for nearly half a mile, and then to the eastward into a long marshy point, called **Old Harbor Point**,—thus forming a large but shallow cove, dry at low water, called Old Harbor. A small cove, also dry at low water, makes in on the southern side of Old Harbor Point, between it and a steep partly wooded hill, one hundred feet high, called Savin Hill. The shore extends to the eastward from the base of this hill into a long narrow sand point, called **Savin Point**. **Old Harbor.**

On the southern side of Savin Hill another large cove makes in,—the shores of which are thickly settled. It is dry at low water and is crossed near its head by a bridge,—over which passes the Old Colony Railroad. The southern point of the entrance to this cove is a flat peninsula, called Commercial Point, composed of low cleared land, thickly covered with houses; and from its southeastern point a large wharf, called Commercial Wharf, extends off to the eastward. This peninsula forms the western point of entrance to Neponset River. **Commercial Point.**

Neponset River is the first river emptying into Boston Bay to the eastward of South Boston, and leads to Neponset Village, one mile above its mouth, and thence to Milton Mills, two miles farther by the river. It is narrow and crooked, the approaches are dangerous, and it is not considered safe for strangers to enter without a pilot. Some description of its shores and obstructions will be given, however, and such sailing directions as can be made intelligible. The river is a third of a mile wide at its mouth, but grows gradually narrower until, at Milton Mills, it is only one hundred yards in width. The western side of the entrance is thickly settled, and is marked by a long wharf, with many buildings upon it, called **Commercial Wharf**, which extends out to the edge of the channel. The eastern shores of the river are composed almost entirely of salt-meadow and are destitute of houses.

In entering the river vessels pass between The Spectacles and Castle Island,—keeping along the western shore of Thompson's Island and steering nearly for Commercial Point. When past Thompson's Island the thickly settled country between Mount Bowdoin and Neponset will be seen ahead; and, on the western side of the channel, Savin Hill will appear as a high, steep hill, partly wooded, and with a number of handsome houses dotting its slopes. It will be noticeable as the only high land on the shore between Dorchester Point and Squantum. To the southward of the hill, however, and well back from the shore, will appear the summit of **Mount Bowdoin**,—one hundred and seventy feet high,—with its sides cultivated and its whole surface dotted with houses and orchards. **Savin Hill.**

Next to the southward will appear **Commercial Point**, marking the western side of the mouth of the river; and to the eastward of it a low, broad, marshy point will be seen, with the mouth of the river between them. This point, called Farm Point, is the eastern point of entrance to Neponset River, and the extensive marshes, of which it is the extremity, are called **Farm Meadows**. There are several patches of firm ground on the peninsula, (which are under cultivation,) and two or three small groves of trees. To the eastward of it and just to the southward of Thompson's Island the high land of Squantum will appear, grassy, bare of trees and under cultivation. **Squantum** separates Neponset Entrance from Quincy Bay,—the large shallow bay which makes in between Squantum and Hough's Neck. **Farm Point.**

Description of Neponset River. On entering Neponset River between Commercial Point and Farm Point the course of the stream is at first **S.** by **E.** for nearly a mile,—between low marshy banks with occasional groves of trees,—until you are abreast of **Neponset**, which is seen about a quarter of a mile back from the western shore. Thence the stream makes a turn about **SW.** by **W.** for a quarter of a mile, passing under the Old Colony Railroad bridge and the county bridge just to the southward of it. Thence it runs **S.** by **W.** (still between marshy banks) for one-third of a mile, thence **SW.** by **W.** for a quarter of a mile, and continues its windings, with an average width of a little over a hundred yards, to **Milton Mills Village.** This village is two miles and a quarter above the mouth of the river in a straight line, but nearly three miles and a half by the windings of the river. The land upon which the village stands is high, slopes gently to the water, and is under cultivation. About a mile above the county bridge a third bridge carries the road to **Railway Village** across the river. All these are, of course, draw-bridges.

DANGERS

IN APPROACHING AND ENTERING NEPONSET RIVER.

Vessels intending to enter this river from the eastward will leave President's Roads when past Spectacle Islands, and steer to the southwestward for Commercial Point. On this course to the southwestward will be seen a red spar-buoy on the western side of the channel. This is on Old Harbor Shoal,—the name given to the extensive flats making off from the western shore, between Dorchester Point and Old Harbor Point,—their eastern end extending to within half a mile of Thompson's Island with less than six feet at mean low water. The buoy is marked No. 2, and is placed in seven feet on the southern side of the extreme eastern end of the shoal. Nearly a mile to the southwestward of it is another red spar-buoy (No. 4), marking the eastern limits of the same shoal. It is in six feet, and bears from Dorchester Point **S.** ¼ **W.**, seven-eighths of a mile, and from Fort Independence **SW.** by **S.**, a mile and a quarter distant.

Old Harbor Shoal.

The best water is about one-third of the way from this buoy to a black spar-buoy on the eastern side of the channel, which is on Thompson's Island Shoals, making off from Thompson's Island. It is about two hundred and fifty yards from the shore, and bears **S.** by **E.** ¾ **E.** from the red spar-buoy (No. 4) on Old Harbor Shoal, a quarter of a mile distant. The buoy is placed in six feet water on the northwestern side of the flats, and is marked No. 1.

Thompson's Island Shoals.

The space inclosed between Thompson's Island, Farm Point and Squantum is one mass of flats, bare at extreme low tides, which it would be impossible for a stranger to avoid except at low water, when the flats on both sides show themselves. It is possible for a vessel drawing not over five feet to beat through this channel with the aid of a chart and a free use of the lead; but no one is advised to attempt it.

When abreast of the black spar-buoy on Thompson's Island Shoals there will be seen ahead and in range with Commercial Point a red spar-buoy. This is on Old Harbor Flats, which make off from Old Harbor Point in a southeasterly direction for about three-eighths of a mile. They are often called *Cow Pasture Flats*, are bare at low tide, and their southeastern edge is quite bold-to. The buoy is marked No. 6, and is placed in four feet on the extreme point of the flats. The course passes to the eastward of it, and when abreast of it leads more to the westward, with Savin Hill to the northward and a black spar-buoy nearly ahead. This is on Farm Point Shoal, which is the name given to the dry flat extending off from Farm Point in a **NW.** by **N.** direction for one-third of a mile. The buoy is marked No. 3, placed in six feet on the northwestern point of the flats, and bears from the red spar-buoy on Old Harbor Flats **W.** by **S.** ¼ **S.**, five-eighths of a mile, and from Commercial Wharf **N.** by **E.**, one-third of a mile distant.

Old Harbor Flats.

Farm Point Shoal.

The course leads to the westward of the buoy on Farm Point Shoal, and here the channel makes an abrupt turn to the southward,—passing to the eastward of Half-Tide Rock, which lies on the eastern side of the channel, an eighth of a mile to the southwestward of the buoy on Farm Point Shoal. The rock is dry at half-tide, and the course passes to the westward of it,—the channel turning more to the eastward (running nearly for Farm Point) and passing to the eastward of the large square pier built on the edge of the flats off Commercial Point. When abreast of the point a black spar-buoy will be seen ahead, which is on Tilston's Flats, and the course passes to the westward of it. These flats make off from **Tilston's Point** (which is the first point on the eastern side of the river to the southward of Farm Point) and extend a quarter of a mile from shore with less than six feet water; and the buoy (No. 5) is placed on their western edge,—bearing from Commercial Wharf **S.**, an eighth of a mile distant. The channel is here very narrow and difficult to navigate.

Half-Tide Rock.

Tilston's Flats.

About three hundred yards to the southward of the buoy on Tilston's Flats will be seen another black spar-buoy. This is on Chatman's Point Flats, which make off from **Chatman's Point** (the first point to the southward of Tilston's) for nearly a quarter of a mile from shore and are quite bold-to. The buoy is marked No. 7, and is placed on the edge of the flats. Passing to the westward of it there will be seen, a little to the south-

Chatman's Point Flats.

ward of the course and on the western side of the channel, a red spar-buoy, which is on the eastern end of Minot's Point Flats. **Minot's Point** is the low marshy point, backed by trees, which makes out on the western side of the river nearly half a mile to the southward of Commercial Point. The flats here extend out several hundred yards from shore and the buoy (No. 8) marks their eastern extremity. *Minot's Point Flats.*

Passing to the eastward of the buoy on Minot's Point Flats, the course leads towards another red spar-buoy, about a quarter of a mile to the southward, which is on Wood's Point Flats. **Wood's Point** is also on the western side of the river, just to the southward of Minot's Point. The flats make off from it for two hundred and fifty yards, and the buoy (No. 10) marks their eastern edge. The course passes to the eastward of it and leads towards a black spar-buoy, which will be seen ahead about an eighth of a mile off and in range with the eastern end of the railroad bridge. This buoy marks Seal Rock, which lies on the eastern side about one hundred and thirty yards to the northward of the bridge and is dry at low water. The buoy is marked No. 9, placed on the western side of the rock, and bears from the buoy on Wood's Point Flats **SW.** by **S.** ¼ **S.**, and from the draw in the railroad bridge **E.**, one hundred and seventy-five yards distant. *Wood's Point Flats.* *Seal Rock.*

Above the railroad bridge there are no buoys.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING NEPONSET RIVER.

I. ***Coming from the Eastward.***—From President's Roads, when the wharf on the southern end of Castle Island bears **W.** by **N.** ½ **N.** and the western end of north Spectacle Island **S.** ½ **E.**, steer **SW.** by **W.** ½ **W.** for Commercial Point, which will appear between Savin Hill and Farm Point. Continue this course, carrying not less than fifteen feet water, and passing about midway between the red buoy (No. 4) on Old Harbor Shoal and the black buoy on Thompson's Island Shoals; and when abreast of the latter steer **SW.** ¼ **W.**, with the red buoy on Cow Pasture Flats a little to the northward of the course. This course will lead with not less than fourteen feet past the buoy until the centre of Savin Hill bears **W NW.**, when the depth will be three and a half fathoms, the eastern pier of **Foundry Wharf** will bear **W.** ½ **S.**, and that course must be steered for the pier, carrying not less than thirteen feet water, and passing to the westward of the buoy on Farm Point Shoal. Thence the course is **SW.** by **S.**, passing to the westward of Half-Tide Rock and carrying not less than eleven feet. When within about a hundred feet of Half-Tide Rock, haul around sharply and steer **SE.** by **E.** ⅛ **E.** for Farm Point, carrying between three and four fathoms. On this course, when abreast of the pier off Commercial Point steer **S.** ¾ **W.** for Commercial Wharf, passing it close-to with not less than eleven feet, and continue the course (if bound up to the village) until you are past the black buoy off Tilston's Point, to which you must give a berth of thirty yards. When this buoy is a hundred yards astern, steer **SE.** by **S.** ¼ **S.** for the black buoy off Chatman's Point, carrying not less than fourteen feet water. Give this buoy a berth of about forty yards to the eastward, and continue the course until it is about a hundred yards astern. Then steer **SE.** ¼ **E.**, carrying not less than eight feet water, until you are abreast of the red buoy off Minot's Point. On this course, if it is flood-tide, be careful not to be set on to Minot's Point. The course passes to the eastward of the buoy, and **S.** ½ **E.** must be steered, keeping the eastern shore best aboard and carrying not less than eight feet water until you are past the red buoy off Wood's Point. Now steer **SW.** by **W.** ¼ **W.** for the draw in the railroad bridge, passing which the same course will lead to the county bridge abreast of the village. Seven feet at mean low water may be taken thus far.

II. ***Coming from Boston.***—On the course **SE.** ½ **S.** towards Spectacle Islands, when the buoy on Castle Rocks bears **W.**, steer **S.** by **W.** for the eastern point of Thompson's Island until Long Island Light-house is brought to bear **E.** by **S.** (On this course the least water will be three and a half fathoms.) Thence steer **SW.** by **W.** ½ **W.** towards Commercial Point, carrying not less than fifteen feet water; and when abreast of the black buoy on Thompson's Island Flats steer **SW.** ¼ **W.**, and follow the directions given above for the river.

Above the bridge no sailing directions can be given. An inspection of the chart will guide those who have no pilot; but a pilot may always be obtained either in Boston or at the settlement on Commercial Point. Only four feet at mean low water can be carried up to Milton Mills.

QUINCY BAY.

This large but shallow bay indents the southern shore of Boston Bay just to the eastward of Neponset River. On the west it is separated from that river by the peninsula of Squantum, and on the east Hough's Neck separates it from Weymouth Fore River. Between these two points the bay is two miles and a third wide and about a mile long. Its shores are mostly low and gently sloping towards the water, cleared and under fine cultivation; but high steep hills will appear behind and over the low lands. Of these, the highest summits are those of **Forbes' Hill** and **Mount Wollaston.** The village of **Quincy** is situated about a mile inland from the shores of this bay, near its eastern end. It has no communication by water with the bay, but there is a narrow frontage on a small stream emptying into Town River Bay.

Squantum. The peninsula of Squantum, which forms the western boundary of Quincy Bay, is of irregular shape, lies **E NE.** and **W SW.,** is a mile long, and has an average width of two-thirds of a mile. Its surface is hilly, bare of trees, and the highest land is about a hundred and twenty-five feet above sea-level. At its western end, where it joins the mainland, it is composed almost entirely of salt-meadow,—forming part of the great **Farm Meadows** which extend to Neponset River. The whole of the high land of Squantum is under careful cultivation; and its northern point, which is a steep hill one hundred feet high, has a few houses at its base.

To the eastward of Squantum lies **Moon Island,** easily recognizable by the precipitous head on its eastern end. It is entirely bare of trees, and at low water is joined to Squantum by a dry flat. (See also page 613.)

Hough's Neck. Hough's Neck forms the eastern boundary of Quincy Bay and separates it from Weymouth Fore River. It is of irregular shape, lies about **E.** by **N.** and **W.** by **S.,** is about a mile long, of moderate height,—the surface being smooth and gently sloping,—and bare of trees except orchards. At its northeastern end it terminates in a smooth green hill one hundred feet high, with precipitous faces, called **Quincy Great Hill.** Two hundred yards to the northward of it, but connected with it at low water, lies **Nut Island,** a small bare islet sixty feet high, with a precipitous face on its northern side,—the cliff descending abruptly from the summit of the island to the water. The channel from the westward into Weymouth passes between this island and Peddock's Island.

Half-Moon Island. Half-Moon Island lies nearly half a mile from the southern shore of Quincy Bay, off the mouth of **Black's Creek,** and is of no importance. It is a crescent-shaped sandy shoal or bank, from seven to ten feet out at low water, and covered at high water, but has the appearance of an island, when uncovered, by reason of the surrounding flats being much lower.

Hangman's Island, which is a small, bare, rocky islet lying off the mouth of Quincy Bay, midway between Moon Island and Nut Island, is surrounded by shoals and must not be closely approached. It is one of the dangers in the approach to Weymouth from the westward.

WEYMOUTH FORE RIVER.

This river empties into Boston Bay to the eastward of Hough's Neck,—Quincy Great Hill forming the western point of entrance and Grape Island the eastern. That portion of the bay into which this river empties is usually called **Hingham Bay,** and its boundaries are: on the east, Nantasket Beach; on the north, Point Allerton and the shore from thence to Windmill Point; and on the west, Peddock's Island and Hough's Neck. Weymouth Fore River is quite wide at its mouth, but quickly diminishes, until at the bridge it is only an eighth of a mile in width. It has not less than three fathoms water as far as the bridge and even for some distance above it; but the channel is narrow and somewhat crooked, and it is not safe for strangers to enter it.

Grape Island. Grape Island lies **E.** and **W.,** is about half a mile long, and has a somewhat saddle-shaped appearance when viewed from the northward,—the land in the centre being the lowest. Passing it, there opens a narrow passage, nearly dry at low water, which leads to the eastward towards Hingham Harbor. The southern side of this passage is formed by a long, low and narrow point, called **Lower Neck,** entirely bare of trees, as is also **Upper Neck,** just to the southward of it. The former separates Weymouth Fore River from **Weymouth Back River,** which empties into Hingham Bay just to the eastward of Fore River.

The entrance to Weymouth Fore River from the eastward is through **Nantasket Gut,**—the narrow but deep passage which leads into Hingham Bay between Windmill Point and Peddock's Island. **Windmill Point** is the low sandy point which makes out to the westward from the foot of Nantasket Hill, and was formerly occupied by extensive salt-works.

Peddock's Island. On the western side of Nantasket Gut will appear the high round head, with precipitous faces, which forms the northern end of Peddock's Island. This head is over one hundred feet high and covered only with grass. Passing to the southward, it will be seen to be connected with the rest of the island by a narrow strip of low land about three hundred yards long. The whole of the island is bare of trees and the surface undulating. The length is a mile and a quarter and the shape very irregular. On its southwestern side, between it and Nut Island, leads the western passage into Weymouth.

A small bare islet, lying about two hundred yards off the southern shore of Peddock's Island, and connected with it at low water, is called **Pen** or **Prince's Head.**

Sheep Island. Bound into this river through Nantasket Gut, when abreast of Prince's Head you will pass to the westward of a small, low, bare islet called **Sheep Island.** It lies a little over half a mile to the southeastward of Prince's Head and about the same distance to the northward of Grape Island, and is surrounded by shoals and must not be closely approached. When past it, the channel leads to the southward and well to the eastward of a square

granite beacon surmounted by a staff and cage. This is on **Pig Rocks**, which lie a little over half a mile to the westward of Quincy Great Hill.

After passing between Grape Island and Quincy Great Hill there will be seen to the westward, well in with the shore of Hough's Neck, a bare islet, called Raccoon Island,—connected with the neck at low water. A little to the southward the southern point of Hough's Neck runs into a long point or head, called **Rock Island Head,** sixty feet high, smooth and grassy. On its southern side the shore makes in to the westward,—forming a large cove, dry at low water, called **Rock Island Cove**, whose shores are mainly composed of meadow. **Raccoon Island.**

On the eastern shore of the river the first prominent point, which lies nearly opposite to Rock Island Head, is called Eastern Neck, and is the first point above Upper Neck. It is a long peninsula, lying **E.** and **W.** between Fore and Back rivers, is undulating, bare of trees, and about sixty feet high near its western end. Here the shore turns to the southward and then to the westward,—forming a shallow cove, which skirts the base of a smooth green hill with somewhat precipitous face, called **Weymouth Great Hill**, one hundred and forty-five feet high. Hence to the bridge the eastern shores are of moderate height, cleared and cultivated; and the settlement of **Old Spain** will be visible about half a mile back from the shore. All of this part of the shore presents a steep but not high face towards the river. **Eastern Neck.**

On the western side of the river, after passing **Gull Point,** (the southern point of entrance to Rock Island Cove,) will be seen the village of **Germantown**,—a small hamlet, situated on the northern side of the entrance to Town River Bay, which leads up to Quincy. Germantown is situated among smooth, low, cleared lands, and has several wharves both on Fore River and on Town River Bay.

On the southern side of the entrance to Town River Bay is Bent's Point, a long, low, thickly settled point, with wharves and docks on its eastern face. The village of **Bent's Point** occupies the shores on the southern side of the entrance to Town River Bay, as Germantown does the northern side. The county bridge crosses at this village,—the river being here about an eighth of a mile wide; but after passing under the bridge it soon widens out into a large bay. **Bent's Point.**

The point on the eastern side of Fore River, where the bridge crosses, is wooded, and is remarkable as being the first wooded point met with on this side of the river. Here the eastern shores spread away to the southeastward and terminate in a shallow cove, whence a small streamlet or brook leads to **North Weymouth.** There is no passage, however, even for boats.

On the western shore, just to the southward of the bridge, opens **Ruggles' Creek**,—a shallow stream running to the westward between Bent's Point and a cleared and settled peninsula of moderate height called **Braintree Neck.** On the southern side of this peninsula makes in Hayward's Creek,—another shallow stream, which leads up to **Newcomb's Landing.** Above this creek the shore runs about **E SE.** for half a mile, and then turns to the southward towards **Weymouth Landing**,—the river being here contracted to the width of a small creek with a very shoal and crooked channel. The shores are almost all cleared, settled and highly cultivated, with occasional groves of trees. **Hayward's Creek.**

Town River Bay makes in on the northwestern shore of Fore River, as before mentioned, between the villages of Germantown and Bent's Point. It is very shoal and not safe for strangers to enter at any time,—being only about one hundred and seventy-five yards wide at its entrance; but it rapidly widens, after passing Bent's Point, to nearly three-eighths of a mile. The northern shores are mostly marshy; but the southern shores are cleared and settled, with somewhat steep faces. **Town River Bay.**

On the western side of the peninsula upon which Germantown is built there makes in a large but shallow cove, called Sailor's Snug Harbor, which is dry at low water. The name does not indicate any advantages as a harbor, but is derived from the institution of that name for superannuated ship-masters, which is built upon its banks. The eastern point of the entrance to this cove is called **Phillips' Head.** **Sailor's Snug Harbor.**

Town River empties into the bay nearly a mile above Bent's Point, and is nothing but a small creek, very crooked and extremely shoal. The sloops which go to Quincy can only sail to the mouth of the canal.

DANGERS

IN APPROACHING AND ENTERING WEYMOUTH FORE RIVER.

I. ***From Nantasket Roads, through Nantasket Gut.***—Vessels use this passage coming from the eastward,—passing through the Gut and steering about midway between Sheep Island and Prince's Head. In doing so they must look out for Prince's Head Shoals, which make off from Peddock's Island and Prince's Head for a distance of six hundred and fifty yards from the former. These shoals have from two to six feet upon them at low water, and to avoid them vessels must not go to the westward of Windmill Point bearing **NE. by N.** Sheep Island, on the eastern side of the channel, is also surrounded by flats, which are known as *Sheep Island Shoals.* They are not buoyed and are rather bold-to, so that the lead is of little use as a guide. Give them a berth of three hundred yards to the eastward. ***Prince's Head Shoals.***

Hough's Neck is surrounded by flats, especially on its eastern side, where they extend off from the foot of Quincy Great Hill for half a mile. On the northeastern point of these shoals there is a ledge of rocks, bare at low water, called Pig Rocks. They lie **E. ¼ N.** from the northern end of Quincy Great Hill, about five-eighths of a mile ***Pig Rocks.***

distant; and a square granite beacon, surmounted by a narrow staff and cage, is erected upon them. It is painted black, but vessels using this channel pass to the eastward of it. It bears from the western end of Peddock's Island SE. by S., about five-eighths of a mile; from Windmill Point SW. ½ S., one mile and five-eighths; and from Sheep Island W. ¼ N., a little over half a mile distant.

When past the beacon on Pig Rocks the course leads nearly for Weymouth Great Hill, and there will be seen ahead, about a mile off, a black spar-buoy. This is on Jack-Knife Ledge, which lies on the eastern side of the channel, an eighth of a mile to the westward of Eastern Neck. It has about three feet at lowest tides, and the buoy, which is marked No. 1, is placed in ten feet water on the western side of the rock. Passing to the westward, the channel leads between it and a red spar-buoy on the western side of the passage, which is on *Gull Point Flats*, sometimes called *Bass Point Flats*. They make off to the eastward from Gull Point for half a mile and are bare at extreme low tides. The buoy is marked No. 2, and is placed in ten feet water on the extreme point of the flats.

Jack-Knife Ledge.

When abreast of the buoy on Gull Point Flats, a spar-buoy, painted red and black in horizontal stripes, will be seen ahead about a quarter of a mile off. This buoy is on Channel Rock, a bad ledge, lying on the western side of the channel, nearly half a mile to the eastward of Gull Point. Vessels should pass to the southward of it and give it a good berth. The channel is here very narrow, but has four fathoms water. Above this there are no dangers in the channel, but it is narrow and crooked, and the flats make off to the very edge of the deep water and are quite bold-to. Vessels must not attempt to go above Gull Point without a pilot.

Channel Rock.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING WEYMOUTH FORE RIVER.

I. ***From Nantasket Roads, through Nantasket Gut.***—When past the buoy on the southeastern end of Centurion Rocks, steer W SW. until Nantasket Gut is fairly open, carrying not less than eight fathoms. Then steer S. by W. ½ W. nearly for Sheep Island, carrying not less than three and a half fathoms, until the long wharf on the southern side of Nantasket bears E. ½ N., or the summit of Nantasket Hill E. by N. ¼ N. Thence the course is SW. by S. ½ S. until you are abreast of Sheep Island, carrying not less than three and a half fathoms water; and then S. ¼ E. towards Grape Island. Continue this course for about five hundred yards, carrying not less than three fathoms, until the southeastern extremity of Sheep Island bears NE. by E. ¾ E., when SW. ¾ S. will lead, with not less than three fathoms, up to the red buoy on Gull Point Flats. When past this buoy, steer SW. ¼ S. towards the buoy on Channel Rock, giving it a berth to the westward and carrying four fathoms water; and then W. ¾ S. towards Bent's Point, carrying not less than four fathoms. It is not safe to go beyond this point without a pilot.

DANGERS

IN APPROACHING AND ENTERING WEYMOUTH FORE RIVER.

II. ***Coming from President's Roads, between Long Island and Spectacle Islands.***—Leaving President's Roads for Weymouth, the course leads to the southeastward through Sculpin Ledge Channel for Long Island Wharf, and when past Wharf Rock, to the southwestward towards Moon Head.

On this course there will be seen ahead, and about three-quarters of a mile off, a red spar-buoy. This is on Sculpin Ledge, an obstruction already described in the dangers in the Back Way. It is a long reef, awash in several places at low water, lying about midway between Long Island and The Spectacles and on the western side of this channel. The buoy is marked No. 2, and is placed in twelve feet off the eastern end of the shoal. The course passes to the eastward of it, and when past it and in the Back Way, look out for *Moon Head Flats*, which make off from Moon Head to the eastward for about an eighth of a mile with less than six feet at mean low water. They are not buoyed, but the sailing-lines lead clear of them.

Sculpin Ledge.

When between Moon Head and the southwestern end of Long Island the channel turns to the southeastward,—running nearly for Quincy Great Hill. On this course there will be seen to the eastward a beacon of open work with a granite base and surmounted by a wooden staff and cage. This is on Sunken Island, or *Sunken Ledge*, as it is sometimes called, dry at low water, and lying half a mile E. by N. from Hangman's Island and the same distance NW. ¼ W. from the southwestern end of Peddock's Island. There is from four to five fathoms water between it and the latter; but ten feet at mean low water is the best that can be taken between the ledge and Hangman's Island. The beacon is painted black, and should be left a quarter of a mile to the eastward.

Sunken Island.

After passing the beacon on Sunken Island the channel leads between Peddock's Island and Nut Island; and there will be seen on the western side of the channel, about half a mile to the southward of the beacon, a red spar-buoy. This is on Wreck Rock, a dangerous sunken ledge lying half a mile to the northward of Nut Island. It has three feet at low water, and the timbers of a wreck upon it are awash at low tide. The buoy is marked No. 4, and is placed in seven feet water on the northeastern side of the rock. ***Wreck Rock.***

The courses pass to the eastward of Wreck Rock buoy and lead towards a square granite beacon with staff and cage on top. This is on Pig Rocks, a dangerous ledge lying on the northeastern point of the dry flats which make off from Quincy Great Hill. The beacon bears from the western end of Peddock's Island **SE.** by **S.**, about five-eighths of a mile; from Windmill Point **SW.** ½ **S.**, one mile and five-eighths; and from Sheep Island **W.** ¼ **N.**, a little over half a mile distant. It is painted black, but vessels using this channel pass to the northward of it. When past it the channel continues to the eastward towards Sheep Island until you are past the eastern edge of the flats off Hough's Neck, when it turns to the southwestward into the river. ***Pig Rocks.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING WEYMOUTH FORE RIVER.

II. ***Coming from President's Roads, between Long Island and Spectacle Islands.***—When, on the course through President's Roads, Long Island Light-house bears **E SE.** and the eastern end of north Spectacle Island **S.** by **W.**, steer **SE.** for the wharf near the hotel on the western side of Long Island. Continue this course, on which there will not be less than three and a half fathoms, until you are within three hundred and fifty yards of the wharf, when steer **SW.** by **S.** for the red buoy on Sculpin Ledge. On this course there is not less than eighteen feet water. Pass to the eastward of this buoy, and steer **SW.** by **W.** ¼ **W.** for Moon Head until within six hundred yards of it, and the southwestern end of Long Island bears **E.** by **S.** On this course the least water is thirteen feet, and thence the course is **SE.** by **S.** ½ **S.**, crossing the flats off Squantum in eight feet water, passing midway between Hangman's Island and Sunken Ledge in ten feet at low water, and continuing the course until you are abreast of the red buoy on Wreck Rock. Pass to the eastward of this buoy and steer **SE.** ½ **E.** for the beacon on Pig Rocks, passing between Peddock's Island and Nut Island, and carrying not less than three fathoms water. When within two hundred and fifty yards of the beacon, with Prince's Head bearing **NE.** ½ **N.**, steer **E.** by **S.** for Sheep Island, carrying not less than four fathoms. On this course, when within about four hundred yards of Sheep Island, steer **S.** ¼ **E.** for Grape Island, carrying not less than three fathoms; and continue this course for about two hundred and fifty yards until the southeastern point of Sheep Island bears **E.** ¼ **N.**, when steer **SW.** ¾ **S.**, following the directions previously given for the river.

III. ***To come through Broad Sound and enter Weymouth Fore River by the Sculpin Ledge Channel.***—On the **W.** ½ **N.** course through President's Roads, when Long Island Light-house bears **SE.** by **S.**, steer **SW.** by **S.** for Sculpin Ledge buoy, and follow the directions given above.

IV. ***To enter Weymouth Fore River by the Back or Western Way from Boston.***—This channel is good for nine feet at low water. (See description of same, pages 613–614.) From the black buoy on Castle Rocks steer **S SE.** for Quincy Great Hill, which will be about four miles off. This course leads in the best water (nine feet) between Thompson's Island and Spectacle Islands, leaving Thompson's Island Flats to the westward. Continue this course until the southwestern head of Long Island bears **E.** by **S.**, when steer **SE.** by **S.** ½ **S.** towards the red buoy on Wreck Rock, carrying not less than eight feet water. When up with this buoy follow the directions given above for entering the river by the Sculpin Ledge Channel.

TIDES.

The rise and fall of tides is about the same as at Boston Light-house,—nine and a half feet. No observations for set and drift of tidal currents have been made; but the set is generally in the direction of the channel, and the velocity small, except at the several entrances into Hingham Bay. At Nantasket Gut the current sets directly in and out with a maximum velocity of two and a half knots; between Peddock's Island and Nut Island the drift is about one knot; and between Long Island and The Spectacles about three-quarters of a knot.

WEYMOUTH BACK RIVER.

This river empties into Hingham Bay just to the eastward of Fore River, (from which it is separated by Lower and Eastern necks,) and is narrow, crooked and shallow, and of little commercial importance. Directly across its mouth lie Grape and Slate islands, which are connected at low water and completely shut off the entrance from the northward,—leaving a very

Description of Weymouth Back River. narrow, crooked and shallow passage on each side of these islands. That on the eastern side has but five feet at mean low water, and the western channel (which leads between Grape Island and Lower Neck) has three fathoms, but is so extremely narrow as to render it impossible for anything but a steamer to keep in the best water. Six feet at mean low water is all that can be taken up to the bridge. At its mouth Weymouth Back River is nearly seven hundred yards wide, but most of this width is occupied by the large flats, dry at low water, which make off from the eastern side of the entrance, extending to the northward nearly to Grape Island and to the westward within two hundred and fifty yards of Lower Neck.

From its mouth the river runs first about **S. ¼ W.** half a mile, then turns abruptly and runs **W.** for five-eighths of a mile to a headland on the southern bank, called Stodder's Neck, which is of moderate height, but has steeply sloping faces on its northern and western sides. Its summit is bare of trees, but there is a thin growth on its western and southern slopes; **Stodder's Neck.** and a small narrow cove makes in on its eastern side, called **Stodder's Cove.** At Stodder's Neck the river widens out considerably and takes an abrupt turn **S.**, which course it continues with slight variation to its head. A quarter of a mile above the neck it is crossed by a bridge, and beyond this it is very narrow between its banks, and so continues for about one-quarter of a mile, forming what is called **The Narrows.** Above this point it becomes a wide and shallow bay, and so continues to the southward for three-quarters of a mile,—beyond which it is a mere creek.

Grape Island, which lies in an **E.** and **W.** direction across the mouth of Back River, is about half a mile long, and presents, when viewed from the northward, a somewhat saddle-shaped appearance,—the land in the middle being the lowest. It is entirely bare of trees, of moderate height, with somewhat steep faces on its northern and western sides, **Grape Island.** and is surrounded by shoals. On the east it is connected by a flat, bare at low water, with **Slate Island,** a small, low, thinly wooded island, an eighth of a mile to the eastward and about five hundred yards to the northward of the entrance to Back River. These two islands shut off any direct approach to the river, leaving only the narrow and crooked channels mentioned above.

No stranger should attempt to enter this river under any circumstances, as none of the shoals and ledges are buoyed, and no sailing directions can be given for the channel.

HINGHAM HARBOR.

The harbor is formed by a large but shallow cove which makes into the mainland in the southeastern corner of Hingham Bay. It is a mile long and seven-eighths of a mile wide at its widest part, but at low water is a dry flat with the exception of a narrow and crooked slue which runs along the eastern shore. The village of **Hingham** occupies the southern and part of the eastern shores of this harbor. The principal entrance to this harbor is through Nantasket Gut; and when **Bumkin Island.** past the Gut the course leads to the southeastward between two small bare islands nearly a mile apart. That to the eastward, which is also much the larger of the two, is called Bumkin Island. It is about fifty feet high, smooth, entirely bare of trees, lies **E SE.** and **W NW.**, and is three-eighths of a mile long. Its western end is somewhat bold-to and may be closely approached; but on the east it is connected with Nantasket Beach by an extensive flat, dry at extreme low tides.

The small island on the western side of the passage is **Sheep Island.** It is low, bare, about an eighth of a mile long, and surrounded by shoal water; and from Bumkin Island it bears **W.** by **N.**, three-quarters of a mile distant.

The channel into Hingham leads close along the western shore of Bumkin Island; and here opens to the eastward a narrow channel leading into **Weir River.** On the southern side of the entrance to this river will be seen a bare **The World's End.** grassy head, called The World's End, about eighty feet high, with a steep face on its western side. On its southern side it is joined by a very narrow strip of low land, about one hundred yards long, to another high, smooth, grassy hill with a precipitous face on its western side. This is called **Planter's Hill,** and forms the eastern point of the entrance to Hingham Harbor. It is one hundred feet high, and its southern slopes are under cultivation.

The western point of the entrance to Hingham Harbor is called Crow Point; and when past Bumkin Island this point will appear as a high bare hill with a steep face to the northward, sixty-five feet high and bare of trees. A pier or breakwater is built out from its eastern end to the edge of the channel. Three-eighths of a mile to the southward of this **Crow Point.** point a long narrow cove, called **Walton's Cove,** makes into the western shore; and on the southern side of the entrance to this cove is a large, high, smooth hill with a somewhat steep face on its northern side, called **Otis' Hill.** This hill separates Walton's Cove from a long narrow cove, called **Broad Cove,** which makes in on the southern side of the hill.

On the eastern side of Hingham Harbor the only indentation of any size makes in on the southern side of Planter's Hill and is called **Martin's Well.** All of these coves are dry at low water.

In coming into this harbor several small islands will be noticed lying apparently in the middle of the passage. The most northerly of these, which is called **Chandler's Island,** is nearly two hundred yards square, low, bare and rocky; and from Crow Point it bears **SE.** by **E. ¼ E.**, one-quarter of a mile distant. It lies on the eastern side of the channel, which here takes an abrupt turn to the eastward, passing to the northward of two small rocky islets,—the westernmost of which, **Ragged Island.** called Ragged Island, lies about three hundred and fifty yards **SW.** from Chandler's Island and one-quarter of a mile **E.** of the entrance to Walton's Cove. It is low, bare and rocky, three hundred yards long, and there is no passage to the westward of it except at high water. About one hundred and fifty yards **E.** of this island lies **Sailor's**

Island, also rocky and bare, lying **E.** and **W.**, and distant about two hundred yards in a **S SE.** direction from Chandler's Island. It marks the second turning point in the channel, which here runs to the southward past the eastern end of this island. The island itself is about two hundred and eighty yards long.

The channel continues to the southward from Sailor's Island for three hundred and fifty yards, then runs to the eastward until within about one hundred and fifty yards of the eastern shore, near the wharf belonging to the salt-works. Here it turns to the southward and skirts the eastern shore at about the same distance, to the head of the harbor.

In the middle of the flats, about a quarter of a mile to the northward of the head of the harbor and a third of a mile to the southward of Sailor's Island, lies a very small bare islet, called **Button Island**, which is only about fifty yards in diameter.

DANGERS

IN COMING INTO HINGHAM HARBOR THROUGH NANTASKET GUT.

No stranger can enter this harbor without a pilot,—the channel being so narrow and so much obstructed as to render such an attempt hazardous in the extreme. A pilot can always be obtained at Hull by making the usual signal.

After passing through the Gut there will be seen ahead, nearly three-quarters of a mile off, a black spar-buoy. This is on the northwestern point of Bumkin Island Shoals, a long narrow shoal which lies three-quarters of a mile **N NW.** from Bumkin Island (western end) and has six feet at mean low water. From Windmill Point this ledge bears **S.** by **E.** ½ **E.**, three-quarters of mile distant. The buoy (No. 1) is placed in thirteen feet and the course passes to the westward of it. When past it you must look out for *Sheep Island Flats*, which extend in a **NE.** direction from Sheep Island for nearly half a mile with less than six feet at low water. These flats are not buoyed, and to avoid them you must keep pretty close to the black buoy on Bumkin Island Shoals,—giving it a berth of about one hundred and fifty yards. ***Bumkin Island Shoals.***

After passing between Bumkin Island Shoals and Sheep Island Flats the course leads towards Bumkin Island; and when abreast of the western end of that island there will be seen on each side of the channel a spar-buoy. That on the eastern side marks the southern point of White Head Flats, by which, as before mentioned, Bumkin Island is connected with the western shore of Nantasket Beach. These flats are dry at extreme low tides; and the buoy, which is painted black and marked No. 1, is also intended to mark the northern side of the entrance to Weir River. ***White Head Flats.***

The buoy on the western side is red and is intended to mark the eastern point of Crow Point Flats. These extensive flats make off from the northern side of Crow Point in a **N.** by **E.** direction for one mile and a quarter, and are in places bare at low water. The northern point of the flats is abreast of Bumkin Island and is not marked, but is to be avoided by keeping the western end of the island well aboard. The eastern point of the flats is marked by the red spar-buoy (No. 2) above mentioned, which is placed in eight feet water and is intended to mark the western limits of the channel into Hingham. The course passes to the eastward of it, and when past it leads towards Crow Point wharf. On this course it is necessary to look out for *the flats on the eastern side of the channel*, which make off from The World's End and Planter's Hill in a westerly direction for half a mile, and are mostly bare at low tide. They are not buoyed, and great care is necessary on the course for Crow Point to avoid them. ***Crow Point Flats.***

When past Crow Point a black spar-buoy will be seen between Chandler's Island and Ragged Island and about a quarter of a mile off. This is on Channel Rock, a small rock which lies in the middle of the channel nearly at the turning point where it leads to the eastward to run between Chandler's Island and Sailor's Island. The best water is to the southward of the buoy, which is placed in fifteen feet on the southwestern side of the rock and is marked No. 3. ***Channel Rock.***

Above Channel Rock there are no buoys, and the channel is too narrow and crooked to describe intelligibly. Just below the wharf at the salt-works there is a beacon in the channel, which is placed about eighty yards **N NE.** from a small rocky islet called **Beacon Island**, connected with the shore by a wharf.

SAILING DIRECTIONS

FOR COMING INTO HINGHAM HARBOR THROUGH NANTASKET GUT.

From Nantasket Gut steer S. by E. ½ E. for the black spar-buoy on Bumkin Island Shoals, carrying not less than five and a half fathoms. Pass to the westward of this buoy, about one hundred yards off, and steer SE. by S. ½ S., (passing the western end of Bumkin Island at a distance of one hundred and fifty yards,) and continue the course until you are abreast of the red spar-buoy on the eastern point of Crow Point Flats, carrying not less than sixteen feet water. Pass to the eastward of this buoy, and steer S. by W. for a quarter of a mile, (or until the northern point of The World's End bears E. ⅛ N.,)

Sailing Directions--Hingham Harbor. and then S. by E. ½ E. for the eastern end of Ragged Island, passing to the eastward of Crow Point wharf about a hundred and fifty yards, and continuing, carrying not less than thirteen feet, until you are up with the black spar-buoy on Channel Rock. Pass to the westward of this, and steer E. ⅛ S. between Chandler's Island and Sailor's Island. Here good anchorage will be found in from ten to twenty feet water; but no intelligible sailing directions can be given beyond this point, and strangers must never enter the harbor without a pilot.

If bound in through Weir River, take a pilot either at Hull or outside, as the channel is too narrow and crooked for anything but steamers.

Vessels bound to Hull, after passing Windmill Point, will perceive to the eastward, close in with the shore of Nantasket, two spar-buoys,—one red and one black. The latter is on *Inner Seal Rock* and is marked No. 1. The red buoy, which is marked No. 2, is on *Outer Seal Rock*, and is in nine feet at low tides. The channel to Hull leads between these two buoys; but strangers had better take a pilot.

The mean rise and fall of tides in Nantasket Gut is 9.3 feet. The tidal current in Hingham Harbor is weak and interferes but little with a vessel's movements.

LIGHT-HOUSES IN BOSTON HARBOR.

Name.	Latitude.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		m. s.	Feet.	
Boston Light-house	42 19 39	70 53 25	4 43 33.7	Revolving.	0 30	111	17
Long Island Light-house	42 19 46	70 57 23	4 43 49.5	Fixed.	.....	121	16
Narrows Light-house	42 19 21	70 55 10	4 43 40.7	Fixed red.	.....	46	12
Minot's Ledge Light-house	42 16 9	70 45 34	4 43 2.3	Fixed.	.....	92	16
Egg Rock Light-house	42 25 58	70 53 52	4 43 35.5	Fixed red.	.....	87	12

TIDES IN BOSTON HARBOR.

	U. S. Dry Dock.	Boston Light.
Corrected Establishment	11h 27m	11h 12m
Mean Rise and Fall of tides	10.0 ft.	9.4 ft.
Mean Rise and Fall of Spring tides	11.3 ft.	10.9 ft.
Mean Rise and Fall of Neap tides	8.5 ft.	8.1 ft.
Mean duration of Rise	6h 13m	6h 20m
Mean duration of Fall	6h 13m	6h 6m
Mean duration of Stand	0h 9m	0h 11m
Rise of highest tide observed	15.1 ft.	12.2 ft.

CURRENTS IN BOSTON HARBOR.

Stations.	First Quarter.		Maximum.		Third Quarter.	
	Set.	Drift.	Set.	Drift.	Set.	Drift.
Three-eighths of a mile S. of Bird Island	NW. ½ N.	0.8	NW. ½ N.	1.3	NW. ½ N.	0.9
	E. by N. ½ N.	0.8	E. by N. ½ N.	1.2	E. ¾ N.	0.7
Three-eighths of a mile N. of Spectacle Islands	W. ½ N.	0.6	W. by N.	0.9	W. ⅝ N.	0.7
	E. by N. ¾ N.	0.7	E. by N. ½ N.	0.9	E. ¾ N.	0.7
W. of Long Island Light-house	SW. ⅝ W.	0.5	S SW.	0.7	S. ½ W.	0.3
	NE. ½ N.	0.4	E. by N.	0.9	NE. by E. ½ E.	0.4
Between Long Island Light-house and Deer Island Point Beacon.	W. by N. ¾ N.	1.4	W. by S. ½ S.	2.5	NW. by W. ½ W.	1.2
	E. ½ S.	1.4	E. by S.	3.3	E. ½ S.	2.1
Between Lovell's and Gallup's islands	S SE.	0.3	NW. by N.	0.6	NW. by N.	0.4
	N NW.	0.2	N. ½ W.	0.9	N. ½ W.	0.5
Between False Spit Beacon and The Centurion Buoy	W. by S.	1.0	SW. by W. ½ W.	1.5	W. by N.	0.6
	E. by N. ⅝ N.	0.6	E NE.	1.2	E. ⅞ N.	0.7
N. of Peddock's Island	W. by S. ¾ S.	1.1	W. by S. ⅝ S.	2.1	W. by S. ⅝ S.	1.4
	E. by N. ⅝ N.	0.8	NE. by E. ½ E.	1.8	E. by N. ⅝ N.	0.6
Between Boston Light-house and Point Allerton	W. ½ S.	1.3	W. ½ S.	1.6	W. by S.	1.2
	E. ½ S.	1.0	E. ½ S.	1.5	E. by S.	1.2
W. of Calf Island	SW. by W.	0.6	SW.	1.0	SW. ½ W.	0.6
	NE. by N. ½ N.	0.5	NE. ½ E.	0.6	NE. ⅝ E.	0.5
Between the Outer Brewster and The Graves	SW. ¾ W.	0.6	SW. ½ S.	1.1	SW. ⅝ W.	0.7
	NE. by E. ½ E.	0.8	NE. by E. ½ E.	1.1	NE. by E. ⅝ E.	0.6
Broad Sound Channels	SW. by S. ½ S.	0.2	W. by N. ½ N.	0.3	W. by N. ⅛ N.	0.2
	E. by S. ½ S.	0.3	E. by S. ½ S.	0.5	E. by S. ⅛ S.	0.4
SE. of Nahant Point	W. by S. ⅝ S.	0.3	W. ½ S.	0.4	W. ⅛ N.	0.3
	NE. by E. ½ E.	0.2	E. ⅛ N.	0.4	NE. by E.	0.3

In the above table, at each station, the set and drift of the flood-tide is placed first, followed by that of the ebb. The set is given by compass; the drift is in nautical miles per hour.

VARIATION OF THE COMPASS IN BOSTON HARBOR.

The magnetic variation for 1879 is 11° 21′ W., with an annual increase of about 2½′.

LIFE-SAVING STATIONS IN BOSTON HARBOR.

There is a life-boat at Nahant, on the northeastern side, near the hotel, which can easily be launched on either side of the peninsula; at Deer Island there are three boats, one large and two small ones; at Point Allerton, inside of the buoy and rocks on the northeastern part of the point, there is another life-boat; and on Hull Beach, on the inside of the neck connecting Hull and Nantasket, there is a boat with a life-car, mortar, hawser and other means of communicating with a wreck.

On Nantasket Beach, about a mile and a quarter to the southward of Point Allerton, there are two life-boats; on Pleasant Beach, a little over a mile to the westward of the entrance to Cohasset Harbor, there is a boat; near Hominy Point, inside the western entrance to Cohasset Harbor, there are two boats; on Simon's Farm Beach (North Cohasset) there is one life-boat; on the beach near the Glades House there is a boat; at Fourth Cliff (Scituate) there is a life-boat; on North Scituate Beach, inside of Minot's Ledge and rocks, there is a boat; at Bass Cove, about a mile to the eastward of the town of Scituate, there are two boats in one house; and on the beach near Scituate Light-tower there is one large metallic life-boat, placed under the care of the Massachusetts Humane Society by the Secretary of the Treasury.

ICE IN BOSTON HARBOR.

Except during very severe winters the Main Ship Channel into Boston Harbor is kept open by the constant employment of tug-boats, which break the ice in towing vessels up and down. In the minor passages, however, (such as the Broad Sound Channels and the Back Way,) navigation is generally suspended during severe weather. Communication with Boston being, as a rule, carried on through the Main Ship Channel, the ice-boats do not enter the other channels to break the ice, which consequently becomes thick and permanent.

The northern limit of the permanent ice formation may be said to be a line from the Fort Hill Channel across Dorchester or South Boston Flats around Dorchester Point; thence across the Neponset channel to Thompson's Island; thence to The Spectacles, (closing the Back Way;) thence to Long Island, (closing the Sculpin Ledge Channel;) thence across the Back Way again to Rainsford's Island; thence across Nantasket Roads to Peddock's Island; thence across Nantasket Gut to Windmill Point; and then along the southern side of the Main Ship Channel nearly to Point Allerton. Its southern limit is a line from East Boston wharves across the flats to Apple Island,—sometimes even closing the Governor's Island Channel,—and thence to Point Shirley. The Charles, Mystic and Chelsea rivers are, as a rule, closed to navigation during the winter.

During very severe weather the ice sometimes forms as far out as the edges of the Main Ship Channel; and in exceptional cases the entire harbor is closed. This was the case during the winters of 1843–'44, 1856–'57 and 1874–'75; but the closing of the harbor in the two first-mentioned winters is attributed to the want of the necessary tug-boats to break the ice. The winter of 1874–'75 was so severe as to entirely close the harbor on several occasions between the 8th and 20th of February, 1875, notwithstanding the utmost exertions of the ice-boats. On these occasions the ice extended as far out as a line from Deer Island Point to Long Island Head; thence to Gallup's and George's islands; and thence across Nantasket Roads to Windmill Point; but these extraordinary formations were of very short duration.

As a rule, from the middle of January to the middle of February sailing vessels should not attempt to pass in or out of the harbor without the assistance of an ice-boat, as without such aid navigation is rendered extremely hazardous on account of the large quantities of drift-ice in the channel. In January and February, 1875, even steamers, although not actually prevented from entering or leaving the harbor, found their movements considerably delayed by the ice. During this same winter it was necessary to keep the ice-boats constantly at work in the channel and about the wharves to prevent the ice from entirely sealing up the harbor; but in ordinary winters no such great difficulty is experienced. Ice-boats are usually employed in the Governor's Island Channel also, as that passage is the outlet for a large quantity of the drift-ice from the upper harbor, and, if allowed to close, would back up the ice towards the mouths of the Charles and Mystic and cause disaster.

Formations of drift-ice do not occur in the harbor itself; but where there are large quantities of drifting ice in and around the entrances the channel is liable to be heavily encumbered during easterly winds. The current of ebb has considerable influence in carrying the broken ice out of the harbor; and, when assisted by fresh westerly winds, it seldom fails to clear the channels. The flood, on the contrary, has a tendency not only to hold the ice in the harbor, but also to bring drift-ice in from the bay. In strong westerly winds, however, its influence is very much modified, and, in some cases, overcome.

Shirley Gut has never been closed by ice, owing to the strong tidal current that flows through it.

The winds which are most effective in clearing the harbor of drift-ice are those from **W SW.** to **NW.**; while those from **N.** to **N NW.** are most favorable to local formations on the flats and in the minor channels; and easterly winds, as before mentioned, are apt to force the ice from outside into the harbor.

Vessels entering the harbor during the winter should not depend too much upon the buoys, as these are apt to be forced from their proper positions and even carried away by the drift-ice. As accidents of this sort occur every winter, no vessel should attempt to enter the harbor during these months without a pilot.

COHASSET HARBOR.

This harbor is situated at the southeastern end of Boston Bay, and is formed by a large but shallow cove of irregular shape which makes into the shore on the western side of Strawberry Point,—the entrance lying five miles and a quarter **SE.** from Point Allerton. The eastern and southern shores are composed almost entirely of salt-meadow, while the western shores show innumerable sand hillocks interspersed with marshy land. This harbor cannot be entered by strangers, for it is so surrounded by bare and sunken ledges as to need all the skill of those well acquainted with the locality to enable them to pass safely through. There are three channels commonly used,—one, the **Western** or **Brush Island Channel,** which enters between Brush Island Ledge and Chittenden's Rock; the second, leading between West Hogshead Rock and The Grampuses, called the **Middle Channel**; and the third, called the **Eastern Channel,** which leads between East Shag Rock and the West Willies.

On approaching this harbor the most conspicuous object is Minot's Ledge Light-house, built on **The Outer Minot,**—the most northerly of the Cohasset Rocks. It is a dark grey granite tower, which shows a fixed white light of the second order from a height of ninety-two feet above the sea, visible sixteen miles. At low water The Outer Minot is bare, as are also many of the rocks inshore of it between the light-house and Strawberry Point.

Minot's Ledge Light-house.

Strawberry Point, which marks the eastern boundary of Boston Bay, is a low cleared point with groups of houses scattered here and there over its surface. It is a summer resort of some note,—the well-known **Glades House** being situated upon it. Masses of bare and sunken ledges, with a few bare islets, surround this point and render a close approach to it very hazardous.

DANGERS

IN APPROACHING AND ENTERING COHASSET HARBOR.

I. ***Coming from the Westward, through Brush Island Channel.***—Wishing to enter by this channel, the first danger met with will be found off Old Harbor, half a mile to the westward of the entrance. It is called Black Ledge, and is formed by a group of dry rocks surrounded by shoals, lying three-eighths of a mile to the northward of **Old Harbor Beach** and a little over half a mile **W.** by **N.** $\frac{1}{2}$ **N.** from Chittenden's Rock. When past it a small, round, rocky islet will appear to the southeastward, about three hundred and fifty yards distant, and a little inshore of Black Ledge. This is **Round Rock,** which is about ten feet out of water and bold-to, and bears from Black Ledge **SE.** by **E.** $\frac{1}{4}$ **E.**

Black Ledge.

Brush Island marks the western point of the entrance to Cohasset Harbor. It is a small, bare, rocky islet about two hundred yards long, lying four hundred yards from the shore and three hundred and fifty yards **S SE.** from Round Rock. At low water it is connected with the main shore, and from it to the northeastward shoal water extends for two hundred yards to a group of bare rocks lying on the edge of the channel. The common name, Brush Island Ledge, is given to all of this shoal, and it is not buoyed,—the bare rocks serving to mark the limits of the channel.

Brush Island Ledge.

When abreast of Black Ledge and bound in by this channel a black spar-buoy will be seen about half a mile to the eastward. This is on Chittenden's Rock, a detached rock, bare at half-tide, lying to the westward of The Grampuses and on the eastern side of this channel. From Brush Island Ledge it bears **E.** by **N.** $\frac{3}{4}$ **N.**, a quarter of a mile distant. The buoy is marked No. 1, and is placed on the eastern end of the rock. When past it the channel turns to the southward, and on the eastern side of the passage there will be seen another spar-buoy, painted red and black in horizontal stripes. This is on Barrel Rock, a small rock, bare at half-tide, lying near the northern end of a large shoal which makes off from Strawberry Point nearly to the western shore, and bearing from Chittenden's Rock **S.** $\frac{1}{2}$ **E.**, distant a quarter of a mile.

Chittenden's Rock.

Barrel Rock.

Passing to the westward of Barrel Rock there will be seen, a quarter of a mile still farther to the southward, and on the same shoal, a number of bare rocks, known under the general name of Sutton Rocks. They consist of a large dry rock, surrounded by ledges bare at low water; and the dry rock bears **N.** by **E.** $\frac{1}{4}$ **E.** from **White Head,** (which is the bare islet, about forty feet high, lying on the western side of the harbor, about seventy-five yards from the western shore and a quarter of a mile from the head of the harbor.) The rocks are three-eighths of a mile to the northward of this island.

Sutton Rocks.

In passing Sutton Rocks the course leads to the eastward of a small, round, dry rock called Quamino Rock. It lies one hundred and fifty yards from the western shore of the harbor and about one hundred and seventy-five yards **W.** by **S.** $\frac{1}{2}$ **S.** from Sutton Rocks. Above Quamino Rock the harbor is nearly all dry at low water,—there being only a very narrow slue running close under White Head to the head of the cove.

Quamino Rock.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING COHASSET HARBOR.

I. ***Coming from the Westward, through Brush Island Channel.***—No intelligible sailing directions can be given by which strangers, however light their draught, may enter this harbor; but vessels

may approach it from Point Allerton inside Harding's Ledge by following the courses given below. When about one mile below Point Allerton, with Minot's Ledge Light-house bearing **SE.** by **E.** ¼ **E.** and the beacon on Harding's Ledge **E.** by **N.** ¾ **N.**, in five fathoms water, steer **SE.**, which will lead you up to the black spar-buoy on Chittenden's Rock. When abreast of this buoy, in about sixteen feet water, pass to the westward of it and to the eastward of Brush Island Ledge, and steer **S.** ½ **W.** into the harbor, passing between Sutton Rocks and Quamino Rock and carrying eight feet water. Above this no directions can be given.

DANGERS

IN APPROACHING AND ENTERING COHASSET HARBOR.

II. ***Entering by the Middle Channel, between West Hogshead Rock and The Grampuses.***—Coming from the westward bound in by this channel there will be seen, when about a mile and a half from Minot's Ledge Light-house, two spar-buoys ahead, about three-quarters of a mile off. Of these the easternmost is a black spar, and marks West Hogshead Rock on the eastern side of the Middle Channel,—**Hogshead Rock** being the name given to the dry part of the ledge. The buoy is marked No. 1, and is placed in sixteen feet on the western end of the ledge. It bears from Minot's Ledge Light-house **W.** ¼ **S.**, five-eighths of a mile, and from White Head **NE.** ¾ **N.**, one mile and a quarter distant, and vessels must pass to the westward of it. ***West Hogshead Rock.***

The westernmost buoy is a red spar, and is placed on the northeastern side of The Grampuses. These are extensive ledges, bare at low spring tides, lying off the middle of the approach to Cohasset Harbor, about three-eighths of a mile to the westward of West Hogshead Rock, and one mile **N.** by **W.** from the Glades House. The buoy (No. 2) is placed on the northeastern end of the northernmost ledge, and vessels using this channel pass to the eastward of it. ***The Grampuses.***

These two buoys (the black spar on West Hogshead Rock and the red spar on The Grampuses) mark the entrance to Cohasset by the Middle Channel. The entrance is here a quarter of a mile wide and there is not less than three fathoms anywhere between the buoys.

Passing between Hogshead Rock and The Grampuses there will be seen to the westward a high dry rock, called West Shag. It lies about three hundred and fifty yards **S.** of the red buoy on The Grampuses, a little over a quarter of a mile **SW.** by **W.** ¼ **W.** from the black buoy on the West Hogshead, and seven-eighths of a mile **W.** by **S.** from Minot's Ledge Light-house. It is tolerably bold-to on its eastern side, but to the westward bare ledges extend nearly to The Grampuses. This rock marks the turning point in the Middle Channel,—the course leading more to the westward towards White Head. ***West Shag Rock.***

Sheppard's Ledge, which is bare at low water, lies on the southern side of the channel, about three hundred and fifty yards to the westward of Gull Island. It is but a part of the extensive ledges and shoals which make off in a northerly direction from Strawberry Point, and it bears **N.** ½ **E.** from the Glades House, distant three-eighths of a mile. Near the northwestern side of the ledge lies a detached rock, called Jacques Rock. It is awash at lowest tides, and bears from Minot's Ledge Light-house **SW.** ½ **W.**, seven-eighths of a mile distant. A black spar-buoy, marked No. 3, placed on the northwestern side of this rock, marks the southern limits of the Middle Channel into Cohasset and must receive a good berth to the southward. ***Sheppard's Ledge.*** ***Jacques Rock.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING COHASSET HARBOR.

II. ***Entering by the Middle Channel, between West Hogshead Rock and The Grampuses.***—***1. Coming from the Westward, inside Harding's Ledge.*** When Minot's Ledge Light-house bears **SE.** by **E.** ¼ **E.** and the beacon on Harding's Ledge **E.** by **N.** ¾ **N.**, steer **SE.** ¾ **E.**, carrying not less than four and a half fathoms, which will lead you up to the entrance, between the black buoy on the West Hogshead and the red buoy on The Grampuses, with not less than six fathoms. Pass midway between these buoys, in from three to four fathoms, and steer **S.** ½ **W.**, with not less than four fathoms, until you are past West Shag, when haul up **SW.** ¾ **S.** for White Head.

Should the buoy on The Grampuses be gone, the Glades House open to the eastward of West Shag will lead safely in.

2. Coming from the Eastward and wishing to enter by the Middle Channel. Vessels should pass half a mile to the northward of Minot's Ledge Light-house and steer **W.**, carrying not less than nine fathoms water, until the Glades House bears **S.** ⅛ **W.**, which latter course will lead midway between

the buoy on West Hogshead Rock and that on The Grampuses, with from three to four fathoms. Continue the course until you are past West Shag, when haul up **SW. ¾ S.** for White Head, as before.

DANGERS

IN APPROACHING AND ENTERING COHASSET HARBOR.

III. ***Entering by the Eastern Channel, between Enos' Ledge and the West Willies.***—This channel is often used by vessels coming from the eastward or from the southward; although, in the latter case, the Gangway Passage is more frequently used. In approaching it vessels must pass to the southward of Minot's Ledge Light-house; and when about half a mile to the south-

Enos' Ledge. eastward of it there will be seen ahead the two spar-buoys which mark the entrance. The buoy to the northward is a red spar and marks the southeastern end of Enos' Ledge, a long ledge lying nearly **E.** and **W.** and dry at low water. From Minot's Ledge Light-house it bears **SW. ½ S.**, three-eighths of a mile distant. The buoy is marked No. 2, and defines the northern limits of this channel.

West Willies. The southernmost buoy at the entrance is a black spar, and is placed on the northwestern side of the West Willies, which are dry at low water, and lie five-eighths of a mile (twelve hundred yards) **S SW.** from Minot's Ledge Light-house and a quarter of a mile to the southward of Enos' Ledge. The buoy (No. 1) marks the southern limits of this channel.

When past the red buoy on Enos' Ledge the course leads to the westward towards the buoy on Jacques Rock, and passes to the southward of a small dry rock surrounded by shoal

East Shag Rock. water. This is East Shag Rock, which lies an eighth of a mile to the westward of the buoy on Enos' Ledge and half a mile **SW. ½ W.** from Minot's Ledge Light-house. Although shoal on its northern and western sides, it is tolerably bold-to on its southern side, but is not buoyed,—being always out.

On the southern side of the channel vessels must beware of *Gull Island Ledges*, extending off to the northward and eastward from **Gull Island** and mostly dry at low water. The northern end of these ledges is two hundred yards from Gull Island and three hundred and fifty yards

Sheppard's Ledge. to the westward of West Willies. Passing these, the black spar-buoy on Jacques Rock, to the northward of Sheppard's Ledge, will be seen. Sheppard's Ledge, as before mentioned, is on the southern side of the channel, about three hundred and fifty yards to the westward of Gull Island, and is but a part of the extensive ledges and shoals which make off in a northerly direction from Strawberry Point. *Jacques Rock* is bare at low water, and from the Glades House bears **N. ½ E.**, distant three-eighths of a mile. The buoy is marked No. 3, placed on the northwestern side of the ledge, and should receive a berth to the southward.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING COHASSET HARBOR.

III. ***Entering by the Eastern Channel, between Enos' Ledge and the West Willies.***—When Minot's Ledge Light-house bears **NW.** by **W.**, three-quarters of a mile distant, with about ten fathoms, rocky bottom, steer **W.**, passing between the red buoy on Enos' Ledge and the black buoy on the West Willies, and carrying not less than three and a half fathoms. This course continued will lead between East Shag Rock and Sheppard's Ledge, carrying not less than seventeen feet until you are past the black buoy on Jacques Rock, with White Head bearing **SW. ¾ S.** Now steer that course into the harbor.

As before remarked, no stranger, however light his draught, can enter this harbor with safety. An inspection of the chart will clearly indicate the dangerous character of the approaches.

LIGHT-HOUSE.

Name.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Minot's Ledge Light-house	**42 16 9**	**70 45 34**	**4 43 2.3**	**Fixed.**	**92**	**16**

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