
Oct. 15 Wednesday. Arrived Boston 7 A.M. Went to Cambridge and went over plans w/c Dr. Bigelow. Went to Gloucester in P.M. Everything ready, but freight had not come.

Oct. 16 Thursday. At Gloucester, waiting for freight.

Oct. 17 Friday. At Gloucester. Notified in A.M. that freight had arrived by rail. Tried all day to get it out of car.

Oct. 18 Saturday. Finally got freight down to wharf at 6 P.M.

Oct. 19 Sunday. No work.

Oct. 20 Monday. Thick fog & calm all day. Decided to wait till tomorrow.

Oct. 21 Tuesday. Came in calm with thick fog. Late it began to clear a little with light variable breez. Mostly N.E. At 11 A.M. cast of line & proceeded.

2.45 P.M. made Sta (10399)

3.30 P.M. fog came in again.

At this station the following birds came aboard:

1. junco, tined out. 1 male purple finch, tined out.

8-pair, richius, fresh and chirpy. Keeping in a close flock, these last soon left, left of the fog.

4-fog & almost calm during the night. Several schools mackeral seen, the water firing brillantly.
Nov. 1 Tuesday. Came in with thick fog & calm.  
5.30 A.M. to 6.30 A.M. making Sta 10400, inside Jeffrey's ledge, in 142 ft.
Breeze abode at the Sta.

Fog & light variable wind all day. Position uncertain. Great time trying to find 135 fath. 135 for Sta 10401 and finally gave it up, making the station blind in 150 fath, the position to be determined later. Made Sta 10401 between 2.15 P.M.
Cleaned off after dark, with constant breeze increasing in force.

Nov. 2 Wednesday. 5.15 A.M. to 6.15 A.M. making Sta 10402.
Wind increasing from W.S.W. to a stiff breeze, & sea rising. As the deck engine has been giving trouble, and it is very doubtful if we could make the next off shore station owing to weather, headed for Boothbay Harbor, where the vessel came to an anchor at 9.30 A.M., to wait a shift of wind to return to Gloucester.

Saw Capt. Hahn, & inspected the new steam Hallows.

Nov. 3 Thursday. 5.00 A.M. to 5.10 A.M. making Sta 10402.  
Wind increasing from W.S.W. to a stiff breeze, & sea rising. As the deck engine has been giving trouble, and it is very doubtful if we could make the next off shore station owing to weather, headed for Boothbay Harbor, where the vessel came to an anchor at 9.30 A.M., to wait a shift of wind to return to Gloucester.

Saw Capt. Hahn, & inspected the new steam Hallows.


Nov. 5 Saturday. 5.15 A.M. to 5.15 A.M. making Sta 10406.
Wind increasing from W.N.W. & rising sea.

Nov. 6 Sunday. No work.

Nov. 7 Monday. Taking stores, gasoline etc. Expect to start south tomorrow morning.

Nov. 8 Tuesday. Election Day. All ready to start at 2 P.M., but engines did not turn up. We did not get aboard until after midnight.

Nov. 9 Wednesday. Left Gloucester 6 A.M., in stiff W.S.W. breeze & choppy sea.
10 A.M. 10-40 A.M. making Sta 10403.
1.45 - 2.30 P.M. " " 10404
Proceeded over Nantucket Shoals.

Nov. 10 Thursday. 3 A.M. Old SW blow. Came to an anchor in Vineyard Haven. SW blow continued all the day and most of the night.

Nov. 11 Friday. Wind veered to NW with rain in the early morning, later moderating and backing to W.
12.15 P.M. Home up anchor & proceeded.
6.15 P.M. to 7.00 P.M. making Sta 10405.
Wind increased from W.N.W. during the night.

Nov. 12 Saturday. 5.15 A.M. to 6.15 A.M. making Sta 10406.
Wind increasing from W.N.W. & rising sea.
8 A.M. hoisted main sail & furlied jib.
12.15 to 1.15 P.M. making Sta 10407.
3 P.M. to 4.15 P.M. " " 10408.
Wind dying down and sea flattening out.
6 P.M. Hoist reef out of mainsail.
7:25 Am to 8:45 Am. making Sta 10400.
Numerous Phoebes & several Whales seen during
the morning.
12:20 Pm to 1:45 Pm. making Sta 10410
3:30 Pm. Wind died out, started engine.  4:30 Pm
climbing up, quite showers.  5 Pm. Wind freshening,
stopped engine.
7:30 Pm. Wind freshening with rain squalls.  Upon
Capt. Suggison's request, decided to make no further
stations until weather improved or a land-fall had been
made.

Nov. 13.  8 Am. arrived at Cape May & tied up at Fish Pier.
went to Phila.  4:15 Pm.

Nov. 14  Tuesday in Phila.  met Mr. VanDer Baught
on P.M. Train for Cape May.

Nov. 15  Wednesday.  Stormy weather with snow.  As it
would have been useless to try to work, stayed in
harbor.

Nov. 16  Thursday.  Day came in with high N.W winds.
By 11 Am. wind had shifted to N. & moderate.
Climb up & proceeded to Norfolk.
12:05 Pm to 1:20 Pm. making Sta 10411
6:55 Pm to 7:35 Pm. making Sta 10412

Nov. 17  Friday.  Midnight to 12:45 Am. making Sta 10413
7:30 Am to 9:15 Am.  " 10414
10:40 "  12:30 "  10415
2:15 "  3:20 "  10416
8:45 "  9:10 "  10417

Nov. 18  Saturday 2 Am. Came to an it in Hampton Road.
8 Am.  Here up & proceeded to Portmouth Va.
Mr. Walsh attended to Norfolk for mail in A.M.  United
Fish Harbors after dinner.  Mr. Walsh left for Washington
on evening boat.

Nov. 19  Sunday.  In port.

Nov. 20  Monday.  In port.  Capt. Mahoney brought boat
feeler aboard in A.M.  May spent in getting
water tanks aboard.  Repairs engine and making
ready for sea.  Weather fine.

Nov. 21  Tuesday.  May came in with brisk N.W winds.
Left harrow working and proceeded to Smith's Point
at 9:00 Am.  Arrived at 10:00 Am.

Nov. 22  Roy came in with light airs from N.  Aft under
way at 6:20 A.M.  Wind died out at 8:30 A.M.  Very pleasant
weather.  Clean and warm.
11:15 A.M. to 11:45 making Stas 10418
2:08 P.M. sky overcast.  Light S.W. breeze.
4:50 P.M. to 5:00 P.M. making Station 10419
None had engine run all day.

Nov. 23  Thursday.  Day came in with very calm and heavy
freshening from S. W.
3:57 P.M. to 4:18 making Station 10420
4:18 P.M. to 7:15 P.M.  " 10421
9:00 P.M. No. 7  10422
By 9 o'clock sea was too rough to continue stationing.
After taking temperature and samples, Capt. Carlson
brought it back to stop work.  Let out 48x40 for
42 miles when ran down wind (N.W) Became by folding
paddles 4 P.M.  Ran before wind to mid night.
Nov 24 Thursday. Rain before wind until 130 AM. New boat hung at Cape Henry. Wind shifted to S.W. 5. Steered S. and made good head room and fine day. Current light, clear at 7:00 AM. Sky clear and moderate wind. Too rough to attempt stations off Matunuck.

At 9:30 PM, wind shifted to W.N.W. and blew a strong breeze. Maneuver taken in and riding calm.

Nov 25 Saturday. 110 AM making stations. 1042.5. Wind from S.

Too rough to make series of stations off Cape Lookout. Weather clear and calm.

At 10:00 PM, trying Pan B. Ship cleared.


I talked with Capt. and fishermen regarding 'rocks' and got a lot of information.

Nov 27 Monday. On Port waiting for Capt. Northrup to come back from Wilmington with both line and hooks. Weather pleasant.

Nov 28 Tuesday. Got under way at 5 o'clock and after crossing bar, steered S.W. 30. A distance of 9 miles.

Nov 29 Wednesday. 10425. Came back from Wilmington with both line and hooks. Weather pleasant.

Dec 1 Friday. They came in clean with light air from W.N.W. Left anchor at 7:40 AM. Bound for fishing ground 9 miles SW. 5 from N.W. Bay. Ran under power to bring ship back down river. Ran on a line course 14 miles to edge of coral reef. Running bearing W.N.W. Towed 10 min. No success. Ran 10 distance back. Towed 15 min with 8 lines caught 65 blackfish. Ran another 100 feet and fished with 8 lines for 15 min. Catch 139 blackfish.

Dec 2 Thursday. Came in from fishing. Ran a line course 2 miles from edge to edge of coral reef. Running bearing S.S.W. Bound lines tried 10 min. No success. Ran 10 distance back. Tried lines 15 min. No success. Ran back 100 feet and tried lines 15 min. No success. Bottoms seem to be good on this leg but no fish caught.

Dec 3 Sunday. On the way to stream. Was on the way to meet and talk with fishermen and pilots. Capt. Lewis and Mr. Montgomery (of South) come aboard in evening.
Dec. 4  Monday. After taking on 350 gal. gas and
steam in left ship at 10:30 and run to lightship
making station 10428 from 2:23 to 3:11 P.M.
6:09 PM to 6:42 making station 10429.
Lightly blowing. Sea calm.
9:06 PM. Showers and squall. Took in main
and forecastle riding sail.
10:00 PM to 11:45 making station 10430. Sea rough,
too rough for making hawks. Ran for Lee of Trygghavn.

Dec. 5  Tuesday. Day came in with fresh SW breeze. Tried
jibboating nearly all day. Tried to get on "Snoppe Bank",
too much wind. vessel would not let lines reach bottom.
Here too at midnight.

Dec. 6  Wednesday. Day came in with fresh NW to N
winds. Decided to go to harbor. Under reefed
main & jib, left Lee at 8 a.m.

Dec. 7  They came in with light NE airs. Very pleasant.
Under way at 9:30. Very light top grounds.
Put drop on at 11:00 PM on canvas and ranges
indicated by pikes and jibboats. Soused dinghy until
7:30 PM. Without locating mine when very scattering
single stornes. Drew jibboating around all night.

Dec. 8  They came in with light southerly airs. Very pleasant.
Made stations 10431, 10432, 10433, and 10434
completely smooth ground 14 miles WSW of off shore
light house. Bennicly falling all day. In port and
along side wharf at 7:30 P.M.

Dec. 9  Saturday. Wind and rain. Left port.
Capt. Freeman came aboard at noon. Left at 2:30 PM.

Capt. Freeman came aboard in place of
Capt. Durris. Wind freshened in evening.

Dec. 11  Monday. Day came in with high SSW winds and
rain. Wind shifted to WSW and continued to blow hard.
Absolutely no chance to work.

Dec. 12  Tuesday. Day came in with high W NW winds and
rain. Wind howling to reach. Too rough to go out.

Dec. 13  Wednesday. Day came in with cold brisk north
winds. Got under way at 4:30 for clean ground
here to river mouth. But sea was too rough
to do outside work. Bennicly streamed all day.
Mr. Beldos. Started to Wilkeson.
Passed Eastport at 12:30 AM. Arrived Wilkeson at 9:45
and tied to wharf. Planted repairs. Brought wind all day.

Dec. 14  Thursday. Day came in clean and cold. Light NW
breeze. Discovered 10 planks on port quarter today.
Not noticed. Must be replaced before going to sea.

Dec. 15  Friday. Day came in with Southerly winds and rain.
Cleaned with NW wind at P.M.

Dec. 16  Saturday. Day came in with cold NW winds.
Made ice in stream until 10 A.M. Work of removing old
planks continued. 8 planks so far removed. Figures
in bad condition. Work across river to ship yard.
Railway busy. Around hoist out.
Dec. 18 Tuesday. Arrived Wilmington 10 A.M. met Mr. Van de Boogaard & his Freeman. Had a short talk with the latter, who promised to come on board in the P.M. to discuss matters, as he had to be out of town for a few days. (He did not turn up.) Went on board with Van de B. Found five planks removed from port quarter, rotten, and the timbers beneath them pretty rotten. Then from yard working on job in very leisurely fashion. Mr. Van de B. left on 3:15 P.M. train. Weather very cold with high winds & showers.


Dec. 21 Friday. Still "working" on planking.

Dec. 22 Saturday. Carpenter worked ½ day.

Dec. 23 Sunday. No work.

Dec. 24 Monday. No work, took walk up swamp road & saw 3 small frogs out. Weather today.

Dec. 25 Tuesday. Yacht Manresa came off railway, and they attempted to haul us out, but failed on the falling tide.

Dec. 26 Wednesday. Vessel hauled out at last, & men at work on stern & port quarter. In the afternoon of swamp road with a duffet, and got the following fishes from the ditch along side the road. Temperature about 65° (air)

- American
- Suckers
- Fundulus
- Gambaru
- Notemus
- Umbra
- Aplodinodes
- Gobiurus
- Eucoccodon

Saw one snake out (like garter snake, but longer and slender) & Hyla pickerings, and one small frog.

About 9 P.M. the Hyla pickerings began to whistle in the swamp back of the railway, and were still at it whenever I woke up during the night (3 a.m.).

Dec. 27 Thursday. Still on railway, men at work. In the afternoon, trolley to have a look at Wrightsville, the troops, and Wilmington Beach. Men fishing on pier (outside). Says nothing doing since Thanksgiving day. Plenty red drum. Hid 1st to Oct 30th, many small, 5 to 10 lbs. In P.M. tried to get some Notemus alive to send to Washington, only got 2, 15 x 1 ft. Put on a high jar to test hardness. Hyles whistling at intervals in afternoon & evening.
Dec 29  Friday. In a.m. finished ditch up road on Eagle Is. with a ditcher. Took 11 species as follows:

- Gambusia, swarming
- Fundulus 20
- Cheilodactylus 1
- Lunker 1
- Anguilla 3
- Amia 3
- Schistodus 19
- Bluntnose 1
- Eumacanthus 2
- Dactis 9
- Alburnus 1

Also 2 salamanders, 2 crayfish & 2 turtles (small).  

Jan 4  Thursday. At 8:20 a.m. left Wilmington and proceeded down the river. 11:45 a.m. passed out by bell buoy off Cape Fear R. entrance. 1:45 p.m. had to make a quick for chance (Stk 10, 46.35) in 6 fathoms off Shallotte bar. But could find nothing but rough hard bottom. Sailed back to 52.5. Proceeded for Brunswick. SW head winds all night.

Jan 5  SW head winds. 2 P.M. had Charleston Lightly abreast. Several small boats out fishing for sea bass. At 3 P.M. head winds increasing to 25 and falling off. Capt. decided to put into Charleston N.B. where we came to an it at 4:45 P.M. 5 P.M. heavy squall with rain.

Jan 6  Saturday. Chained up during night with stiff N.W. gale. 8 A.M. hove up & started for Brunswick, 9 a. Wind steadily failing all day. About 2 P.M. had

Dec 30  Saturday. Carpenters still “working” on planks. Only 11 day today. Shifted crew from yard over to Wilmington side of river.

Dec 31  Sunday. No work. Went down to Wrightsville beach in P.M.
To start motor. Smooth sea all day, no sign of fish except a few gannets diving.
The Sunday fresh water off Charleston extends a long way off shore (to the S.W.)). Water all day pale green.

Jan 7th. Sunday. Arrived at Brunswick about 9 A.M. Thre Mr. Poole, of the Post Office, who introduced me to several shrimpers, and gave me the directions of all of them. Mr. Shaefer, of the Elyan Canning Co., was out of town. Looked over a number of the shrimping boats. The trawl heads are from 30 (25 sometimes) to 50 ft. square, with a mesh of 1/2 to 1 1/2 inch stretch. They are of various shapes and proportions, each man making up his favorite shape. Some are tined, and some are not, mostly not. The nets are headed by hand, even in the larger boats, by a crew of 4 to 5 men. When the boats are in, the cod-end is lifted by a tackle slung from a pair of three-poles extending over the stern. All the nets have wide, square eyes, some with overhanging "pouches" and others. They seldom fish in water over 20 ft. deep. Fishing proceeds in every month except May, June & July, when the shrimps are supposed to be spawning.

Jan 8th. Monday. Visited every fishery in the place in the effort to buy two shrimping boats, but none were to be had. If we had been here on Saturday it would have been easy to get them. It would takeProbably 2 days to get them made. All said the same thing. All said they could be had in Fernandina. Without trouble.
Saw C. P. Goodyear,
Brunswick Canning Co. (Mr. Foremlo)

Brunswick Sea-food Co. (Mr. McCallan)
Elyan Canning Co.
Mr. Colos (a cabinet maker who sometime makes nets)
A number of fishermen.

Crew busy today stuffing lads in bow at water's edge, taking stores, gasoline, water, etc.

Jan 9th. Tuesday. Left Brunswick at 6:30 A.M. for Fernandina. Arrived Fernandina 2 P.M. Called on several shrimping packers, in the effort to get nets. Finally arranged with Mr. A. H. Foremlo, of the Fernandina Packing Co., to have his net-maker make up 2-30 ft. shrimping trawls, to be finished and delivered tomorrow, the price not to exceed $50 each. This is the usual cost of such nets, and the maker, A. Fisher, has a reputation for doing excellent work. There was no other way to get these nets without considerable delay.

Then are about 150 boats engaged in the shrimping fishery here. Mostly small, manned by 2 or 3 men each, chiefly Portuguese & Norwegian. Arranged with one of the Portuguese fishermen to go out with him tomorrow.

Jan 10th. Wednesday. Left hotel in shrimping boat at 5 A.M. This boat, about 30 ft.; 15 h.p. fishes a 40 or 50 ft. net with boards as follows:

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| 10.00 | 25.00 | 09:05 |
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I've taken the Star, Pennant 16" x 24", the after part 1" longer than the lower.
Note: 3" from top & bottom, 30 to 35 feet, work.
We made 5 hauls of 1 hour each. The 1st two south of the jetty on sand, 5" to 2" faith, and the last 3 north of the jetty on sand bottom. Using a 40 ft net, 2 in stretched, with 1/2 in stretched on each end.

Haul 1
1 Bushel Shrimps
10 small fish, cutlass fish, flounders, tiger fish, whiting, bull heads, squates, small fish, etc.

Haul 2
1/2 Bushel Shrimps
1 small ray, 1 cow-nosed ray, 1 small brown-tail shark, 1/4 bushel of small fish (as before) 9 blue crabs.

Haul 3
3 Bushel Shrimps
2 bushels small fish (as before) 10 blue crabs, 6 blue crabs.

Haul 4
5/2 Bushel Shrimps
1/3 bushel small fish (as before) 1/2 bushel brown, 5 blue crabs, jelly fish, etc.
3 blue crabs

Haul 5
3 1/2 Bushel Shrimps
1/2 bushel small fish (as before) 2 bushel brown, jelly fish, etc.

The fish taken in the shrimps trawl ran as follows.

**Cassarion taurus** Sand shark 9 11 cm, wh. 1/2 Kg.
**Cassarion tiburo** Brown-bait 41 cm, tail & skin saved.
**Rhinoptera quadriloba** 29 x 57 cm. Tail 55 cm. Cut & saved.
**Drupetis sp.** 34 cm.
**Myctophus nucius** 16 x 28 cm.

**Cynopsena**
10 cm 6
11 cm 30
12 cm 30
13 cm 2
14 cm 1
15 cm 1

Sample taken at random from catch.

**Sillaginidae**
8 cm 2
9 cm 13
10 cm 16

Sample taken at random.

**Leuciscus fasciatus** Ball head
8 cm 2
9 cm 3
10 cm 4

Sample taken at random.

**Meniscus Whiting**
12 cm 1
13 cm 1
14 cm 1

Sample taken at random.

**Microgobius undulatus** Croaker
13 cm 1, 14 cm 1, 15 cm 1, 16 cm 1, 17 cm 1, 18 cm 1 (all seen)

**Leiostomus sandvicensis** Spat.
14 cm 1
15 cm 1

(above all seen)

**Pepirius alepidotus**
9 cm 1, 10 cm 1, 11 cm 2 (many more present)

**Pomotomus triscantheus**
11 cm 1, 12 cm 1, 13 cm 5, 16 cm 1, 17 cm 1 (more present)

**Trichiurus lepturus** Silver eel
33 cm 1, 34 cm 1, 36 cm 2, 42 cm 1, 45 cm 1.

**Chelomycterus cichrous**. Sorting, about 13 cm.
Jan 13 - Saturday
- 6 AM: Fowey Rocks abeam
- 9:30 AM: Cape Fear Light
- 1:30 PM: Alligator Reef

Jan 14 - Sunday
- Arrived Key West 7 AM. Called on Mr. Porter. Nowork.

Jan 15 - Monday
- Vessel refitting engine. Saw Mr. Brown, Sup't. of the new N.W. Station, & visited the site. 6 ft channel claimed to be a train. Conveyed well finished and grounds bought up to grade. Thought to make a very good looking and comfortable place, but lots of attention should be given to planting palms etc to break the cruel glare.
- A little much soil should be spread over the sand and worked in.

Jan 16 - Tuesday
- Still refitting engine and taking stores. Very little rain in the fish market. No turtles.

Jan 17 - Met Capt. O. M. Olene (Capt. of Yard) Naval Sta, Key West, yesterday. He has a small convict train and wants fish. Promised to try and lend him some sword-tails & Paradies fish.
- At 1 PM: Left Key West on first oceanographic line. 2 PM: Made Sta. 10437 in 70 fath. Sand Key bearing N.W., about 1 miles.

Jan 18 - Thursday
- Arrived at Garden Key, Tortugas, at 7 AM. Worked with fish mind in channel off Tortugas for a little while in morning, taking
1 Jan 19

Caught shark, Carcharinus willardii, from vessel at dark late yesterday. Measurement as follows:

- **Length:** 2.45 m
- **Gape:** 25 cm
- **Sword to D.:** 73 cm
- **Caudal:** 63 cm
- **Pectoral:** 46 cm

Caught at: TT 10740.

Seized on the beach in the morning with little result, and vessel was getting ready to leave Tortugas, when about 10.30 AM. the two coast lightkeepers from Isla de la Higuera came in their launch, and informed us that the head keeper had been severely injured the night before, and asked us to come over and look at him. The cast accordingly went over, and found the old head keeper, Russell, in such a bad way with a hole in the back of his head that he brought him back to Isla de la Higuera at once, and at noon we started for Key West under sail and power. Arrived Key West 11 P.M. & took the man home for medical treatment.

Caught 1 Spanish mackerel trolling en route.

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Jan 30 Saturday. We are so late and behind in our work now, that I decided to omit the first him of stations planned, and give full time and attention to the second. Took ice, sardines, and left Key West for Boca Grande at 10 AM. Went out N.W. Chan, and 20 miles from outer bar on our course, received StA 10439 at 2.15 PM. in 10 fath. head out toward, getting only two fish. TT 10741 + 10742.

Jan 21 Sunday. 2.15 AM to 10440 in 11 fath., Santeetlah Sound bearing NNE about 20 miles, 11 AM. arrived at Boca Grande & anchored. Spent the afternoon asking inquiries about the fish mortality in November. All agree that there has been no trouble since then. Stayed here for fishing, but none seem to be caught. Went up beach about 3 miles - saw no trace of the late plague.

Length & wt. of young barracuda seized Jan 19:

- **35 cm:** 220 g
- **29 cm:** 180 g
- **23 cm:** 100 g
- **16 cm:** 80 g


During the morning took on bolting from:

1. **Myctophrema fasciata planus:** 55 cm. 2 miles S.
2. **Scombromorus maculatus:** 19 cm. 2 miles S.

Arrived in bay below Port Tampa after dark & anchored until daylight.
Jan 23
Tuesday. Went alongside wharf at Port Tampa
9 Am. Set acetylene, gasoline & stores.

" 24
Wednesday. Left Port Tampa 9 Am. Proceeded, while going down the bay took on
some 1 Mystacura microdactyla, 72 cm, 3½ Kg.
4 30 Pm made Sta 10441 5 miles W. from Tampa
Tide Chart, no tide.
10 Pm. made Sta 10442

Jan 25
Thursday. 4 Am made Sta 10443
11 Am. Heavy rain & NW. Squalls.
12 30 Pm made Sta 10444.
2 30 Pm. - 10445

Jan 26
A moderate "north" all day. One of the men
suffering from a bad cough at base of spine.
Blowing northward for Cape San Blas, met
flying current & magnetic disturbance which
left us back considerably.

Jan 27
12 30 Am. made Sta 10446. C. San Blas leaving
NE by E ½ E at 5 miles.
8 30 Am arrived at Port St. Joe, for medical aid
for injured man.
9 Am to 12 30. Bound deep-broad in St Joseph's
Bay with launch. Got many small fish as follows.
Many were preserved, including all that time was no
time to identify at the moment.

St. Joseph's Fish
Lined fish 15, 17, 18, 18 cm.
Tomcods 10, 10 + 11 cm.
Jungle 9, 12 + 13 cm.
Small topknot cat 15, 15 cm.

Deflection formula. 17 cm = 43.9a.
Cleithrum 8 cm 4
9 " 3
10 " 1 10
15 " 1
20 " 1

Bat-fish 22, 24 cm.
Ancylobates 27 cm = 355 ga.
29 " = 355 ga.

Orthophore chaetopterus
9 cm. 7 68 ga ab 9.7
10 " 2 29 .. " 14.5
11 " 10 182 .. " 15.2
12 " 8 194 .. " 19.15
13 " 9 227 .. 25.7
14 " 6 190 .. 31.7
15 " 5 210 .. 41
16 " 4 198 .. 54.5
17 " 1 60 .. 60

Spot. 13 cm. 6 15 2 ga. ab. 24.3
14 " 6 190 .. 31.7
15 " 3 120 .. 40.6
16 " 15 795 .. 49.9
17 " 22 1210 .. 55.7
18 " 37 2385 .. 64.2
19 " 28 2030 .. 72.2
20 " 10 790 .. 79.5

Total 11 cm. 3
12 " 3
15 " 1
14 " 1
17 " 2
Fish - 8 cm. | 29.90 | 7.45
9 " | 6 | 31 | 38.74
10 " | 3 | 98 | 13.35
11 " | 12 | 180 | 15.42
12 " | 11 | 220 | 20
13 " | 8 | 124 | 24
14 " | 1 | 37 | 37

47

Trout - fish | 1, 17 cm. | TT 10743
Skate | 2 | [much other small]
Sea - robins | 3 | [staff preserved.

Jan. 25: Sunday. 7:30 A.M. to noon, worked over ditch, small streams & Cypress Swamp with dip net & secured a good collection of local fish. Found young mullet in the ditch of the town of Port St. Joe, entirely cut off from salt water, and apparently in good health. Sandbars in ditches connecting with Cypress Swamp. Also many Mulleines in both salt & fresh water. All the catch preserved in 1 2 qt. jar.


In P.H. Blake harpooned a large Galeocerdo, 15 ft. from the beach. There were three in company, the 2 smaller (about 7 or 8 ft.) spotted, and the largest, which was harpooned, plain in color. Jaw & sample of skin preserved, also a small remora attached.

Fur, TT 10744
Shin, TT 10745
Rear, TT 10746

This shark was large & very easy to land on the beach. It had a female, and its stomach contained 1 mowing gull, 3 blue crabs & 55 mullet. This would seem to indicate the presence of mullet in the bay, although the fishermen say there are none now.

Measurements as follow:
Total length | 3.58 m
Snout to D. | 111
Length base of D. | 31
Height 1/4 D. | 39, Back 23
Interdorsal space | 94
Length base 2/3 D. | 14
Height 2 1/2 D. | 14, 23
2nd D to caudal notch | 29
Upper lobe caudal (from notch 8-9)
Snout to Pectoral | 85
Base Pectoral | 23
Length actual | 53
Pectoral to ol. | 102
Base caudal | 92
Height 1/4 D. | 19, back 14
Caudal to caudal notch | 22
Interdorsal | 43
Snout to eye | 19 (in plane)
Eye | 33
" | 1/2 gill | 44
Eyes were smooth, back 58
Space between nostrils | 17
Jan. 29 Monday. Left Port St. Joe 10 A.M. (delay caused by getting fresh meat) + just outside the channel buoys located shrimp net 1/2 hr on smooth white sand - no result except 1 small crab. Proceeded to take up lines of trawlers into Pensacola.

Saw Dr. T. C. Kelley, Port St. Joe, Fla.

Jan. 30 Midnight to 2:30 A.M. made Sta. 10447 in 120 fath. 
7 A.M. to 8:45 A.M. made Sta. 10438 in 72 fath. 
10:30 A.M. to 11:30 A.M. 10439 14 fath. 
2 P.M. to 2:15 P.M. 10430 6 fath. 
4 P.M. came to an anchor in Pensacola Harbor, just before a heavy fog closed in.

Jan. 31 Wednesday. Saw Mr. Wells of the F.E. Saunders Co. No shrimp coming in here now. The catch here is made on sand in the deeper waters of the bay. Has not been tried outside which, here is all white sand. Flounder trawling here a failure.

Left at 10:25 P.M. by rail for New Orleans.

Feb. 4 Saturday. Arrived New Orleans 8 A.M. Looked over the market, and saw Mr. Tulane of the Conservation Commission, & had a long talk with him. Left New Orleans the night of the 3rd. Had hoped to stop off at Biloxi etc, but trains did not serve.

A Norther during these two days brought the thermometer down to 23.

Feb. 4 Sunday. No work. Heavy S.W. winds.

Feb. 5 Monday. Heavy N.W. winds during the night. Everything frozen up during the night - therm. at 7:30 A.M. 21°F. Vessel took water & final sink. It had been the intention to get away in the afternoon and reach Mobile entrance at daylight, but the engine failed to turn up and could not be found.

Feb. 6 Tuesday. Engine turned up early in the morning, and vessel got away 8:30 A.M.

9 A.M. took Sta. 10451 in Pensacola Bay in 5 fath. To ascertain conditions after a week of freezing weather. Practically calm all day. Used engine a good deal.

Feb. 7 Wednesday. 6:30 A.M. made Sta. 10452 about 3 miles E of Sand Isd. light, off Mobile entrance. Surface 15 or 15.5. This Sta. consisted of their trials with shrimp trawls as follows, but finding only 15 ft. wide. Staff churning sea with stiff SE wind prevented going into shallow water, made trial difficult.

Fleet 1, 6:45 - 7:15 A.M. 9 fath. Died bottom.

No shrimp.

15" Croakers weighed 100 lbs. 1 ton.

12 sea rats

12 spoolers

14 sea cats

1 hogfish

1 pilchard

1 rooster

Total 193 fish. 160 83% small foot. fish.
Wind increasing after this station, tending to be fair for St. Augustine, proceeded to that port hoping to get Messrs. Julian & Poulain for further trials.

Off Ship Rd. struck a very rough, which luckily did no damage. Arrived St. Augustine 6:30 P.M., after pitching in the sand for another outside the harbor.

Wired Messrs. Julian & Poulain of our arrival, but Mr. Poulain had no shore, nor telegraph connection.

Feb. 8 Thursday. Went on early train to Lakeshore, & saw Mr. Poulain. He was so pleased with our find off Mobile that he ordered his largest boat out to make another trial.

Read him that Mr. Julian was out of town until next week. Accordingly decided to make trials off here on the 9th & 10th, returning to St. Augustine on Sunday the 11th to fit out for the run to Port Arthur, Tex. Weather bad all day.

Feb. 9 Friday. Left St. Augustine 8 A.M. for trials outside. Rough, northernly breeze & cold. Saw Mr. G.F. Doubled at the place where he was casing on the bottom. He claims that the shrimp inside are small except in March.

10:05 A.M. Made Sta. 104° 3'. Starting 1 mile S from Ship Rd. Bar outside. Quarry + towing. Shrimp not W in 1/2 to 3/4 fath, fishing 15 ft. hardwood. Surf, about 5 ft. Headed 1/4 hour & got only a few small anchovies. This is a barren mud bottom.


For the 3 hauls, a total of 1857 fish were taken, of which 884 or 47.6% were young croakers, spot or trout.
Catch as follows:

10 Shrimp of various sizes
3 Hake fish, 21, 18, 17 cm.
2 Sting-rays (left), T.T. 10752 + 10753
1 Atlantic fish
1 fan fish
1 Squid
1 octopus
2 small Hake
2 small Hake
2 small Hake
2 small Hake
2 small Hake
1 small Hake, 21 to 12 cm.

2.15 P.M. Made Sta 10456 in 6 to 7 feet, light wind, outside Haida Gwaii. Sea floor 54°, bottom 12:34.5 C° at 11.

Headed shrimp net 1/2 hour, fishing 15 ft.

Catch as follows:
1 hake fish
1 small Hake
2 " squid
1 " vanis
2 " Hake
1 " octopus
1 " Squid
1 " Squid

Total - 16

2 baskets of shrimp, 2 lbs each, 15 ft.

Spotted P. snail
15 cm
86 cm
68 cm

Bandella
2
13 + 11 cm

Stutterer
2
11 + 11 cm
Monticellus, 12 as follow:

<table>
<thead>
<tr>
<th></th>
<th>cm</th>
<th>Weight</th>
<th></th>
</tr>
</thead>
</table>
| 27 | 168 grams
| 26 | 190   |
| 25 | 162   |
| 24 | 150   |
| 24 | 140   |
| 24 | 135   |
| 23 | 124   |
| 22 | 119   |
| 21 | 94    |
| 20 | 73    |
| 19 | 57    |

\[ \text{Total} = 1582 \text{ g} \] avg. 132 grams.

Anchovies: 13
Sea cat: 3, 23, 24, 25 cm.
Hepophysis: 3, 12, 13 +1 cm (Rept.)
Carp: 6, 14, 15, 20, 22, 22 +2 cm.
Cutlasses: 3, 25, 26 +28 cm.
Puffers: 4, 7 to 8 cm.
Chilemytus: 1, 15 cm.
Squid: 7, 6 to 9.5 cm. Rept.
Hog choliner: 1, 11 cm.
Small Freshwater: 8, 10 to 11 cm.
Sting rays: 1 (same as Sta 1045-4)

Boat anchored for the night at end of this station.

Feb. 10
Sta. 1045, 7 south of the W. end of Horn Jd. in 5 fath. mud & sand. Surface temp. 54.5.
1st haul: 6:45 a.m. (8:45 A.M.) Summer E. Current in.

39 crookes as follow:

<table>
<thead>
<tr>
<th>cm</th>
<th>Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>18 cm at 42 grs. 20 cm at 77 grs.</td>
</tr>
<tr>
<td>15</td>
<td>17</td>
</tr>
<tr>
<td>15</td>
<td>28</td>
</tr>
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<td>15</td>
<td>30</td>
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<td>43</td>
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</tr>
<tr>
<td>18</td>
<td>48</td>
</tr>
<tr>
<td>18</td>
<td>50</td>
</tr>
</tbody>
</table>

1. Monticellus
2. Small crookes
3. Small trout
4. Ophiuromorpha
5. Many anchovies
6. Sea cat
7. Cutlasses
8. Sting ray
9. Anchovies
A few squid.

2nd haul, 45 min. (9:50 A.M.), current E & summer in.
Feb 10th, 11.15 A.M. S.E. of Ship Isd., 3½ fath. wind, windless, fishing 15 ft. wide.
Catch as follows, first haul:
5 bushels shrimps, "large medium," a very clean haul.
1 Bonnet head shuck, 38 cm.
1 Sting ray
2 Spot
1 Murex
17 small trout
5 Stiliger
2 Cutlass fish
2 butter fish
1 Hunk fish
2 Chicken claws

2nd haul, 12.40 P.M. 35 min. 5½ fath. wind, fishing 15 ft. wide.

Catch 10 bushels shrimps, "large medium.
Practically no fish, so they have not picked out.

The vessel then returned to Gulfport, arriving there 4.50 P.M. Two bushels shrimps were kept as a sample for inspection, and the rest given away.

Feb 11th.

Sunday. Mr. F. E. Durrer, who has a factory on the wharf, inspected the shrimps, pronounced them excellent, especially their cleanliness from sand. Galliano's shrimper hauled them over, and had not much to say, except that they were uniform and of good size for canning. Mr. W. H. Nickerson, dealer, also saw them.

At 11.30 I went by boat to Biloxi, and dined with Mr. J. M. Harmon, inspector for the Louisiana Commission, who took me all over the place.

During my absence Mr. Galliano came and looked over the shrimps, and was much pleased. He said that was far superior to Gloucester fisherman, who were not afraid to go out and get them. It disgusted him to learn that boats much smaller and less seaworthy than his went 20 miles out of Gloucester gill-netting all winter.

Feb 12th.

Monday. Most of this day was spent in getting gasoline, etc.
At 4.00 P.M. the vessel left Gulfport for Port Arthur, Tex. Outside the harbor the surface of the water was 50.5°. Water sample taken.
Feb. 15, 3 A.M. Struck the muddy surface water off it. Mississippian, the surface temperature dropping suddenly from 64° to 50°.

9:15 A.M. To 11 A.M. Making Sta 10461 in 38 fath of S.W. Pass. Rich hauls of young fish & leptocephalus, also young mackerels etc. As the cold surface water does not extend to 12 fathoms.

2:15 P.M. To 3:30 P.M. Making Sta 10462 with shrimp trials. Station in 9 fath, mud bottom, south of Barataria Pass. Not much in nets, but a swarm of dark green diatoms. Many fish breeding water (prob. Opisthormus) and many pelicans fishing. Shrimp trials, 1 hr, 9 fath, 15 min, 13 fath wide, trolled very slowly.

3 baskets full large prawns
1 tender fish as follows:
103 small hound weighed 5.5 lbs
2 croakers 4 robins 2 mormon fish
1 tetra 1 bandella 1 sand fish
1 tar-fish 7 stilletto 14 cats
2 lizards 29 cutlass 11 small flounders (left)

Feb. 18, 4:45 P.M. To 6:05 P.M. Making Sta 10460 in 70 fath off South Pass. Very rich hauls of young fish & leptocephalus, also young mackerels etc. The cold surface water does not extend to 12 fathoms.

The prawns in the hand weighed as follows: (1st sample) 30 lbs, running 30 to the 23 fath, 8 against the drift. Shrimp running 50 to the 23 fath.

<table>
<thead>
<tr>
<th>20</th>
<th>1850</th>
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</thead>
<tbody>
<tr>
<td>24</td>
<td>1610</td>
</tr>
<tr>
<td>30</td>
<td>6330</td>
</tr>
</tbody>
</table>

2nd haul, 4 P.M. 4½ fath, 20 min., 15 fath wide.
3 prawns:
1½ bucket of fish as follows:
38 mutilicinclus weighed 2.75 lbs.
9 small trout
1 " Bandella
42 " Stilletto
4 cutlass
1 puffer
3 " cats
2 " leptocephalus
22 " small flounders (left)
6 squid
1 sting ray

3rd haul, 5:30 P.M. 5 fath sand, SW from 2 1/4 fath.
15 min., 15 fath wide.
10 shrimp
2 " mutilicinclus 6 squid
28 " cutlasses
9 " small trout
3 " Bandella
3 " Stilletto
1 hog choker
11 anchovies
Feb. 14 8 A.M. to 10 A.M. made Sta. 10463, in 12 fath., stiff blue sand bottom. Many small schools of mackerel about. Tried the little purse seine on them, but it was no use. Shrimp trawl produced only 5 robins & six squid. Barren bottom.

Feb. 15 Thursday. 3.15 P.M. to 4.15 P.M. made Sta. 10464, off Trinity Shoal in 11 fath., blue sand. Barren bottom, nothing taken in trawl.

Feb. 15 Thursday. 7.45 A.M. to 9.20 A.M. made Sta. 10465, Calcasieu Pass traving NW by N in 4½ fath., sand bottom. Surface water muddy.

Shrimp trawl, 1½ hour, ½ ton.

27 shrimp
3 mackerel (small)
9 herring
1 croaker
1 stiltfish
1 lizard
5 cutlass fish
1 robin
2 anchovies
4 small flounders
10 hog chokes
Several immense & solid gellety fish.

Shrimp trawl, 2-½ hour, ¼ ton.

16 shrimp
5 mackerel
1 tuna fish
1 herring
1 croaker
3 robins
2 blue crabs
15 stiltfish
3 anchovies

Feb. 16 Friday. Left Port Arthur 11 A.M. proceeded out.

3.15 P.M. to 4.05 P.M. made Sta. 10467, 7 miles SW. from Sabine Pass out in bay, in 7 fath. gray sand & wind.

Shrimp trawl, 30 min., 5/8 ton.

25 large shrimp (and a few small)
1 great wash
9 small herring
1 hog chcker
1 stiltfish
1 small spade fish
17 flounders
5 anchovies
Feb. 17 Saturday. 6.15 AM to 6.30 AM. Made Sta 10488 in 6 1/2 ft. Galveston Wharf boat bearing NWW about 3 miles, on grey sand + sand bottom.

Shrimp Trawl, 3/4 hr.
31 large shrimp (4 small).
3 small croakers.
13 grunt 1 anchovy
20 redfish 1 scad
1 Orthoprieta 1 cutlass
1 Pteropas

The 31 shrimp measured + weighed as follows:

<table>
<thead>
<tr>
<th>Length (cm)</th>
<th>Weight (grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>25</td>
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<tr>
<td>17</td>
<td>14</td>
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<td>18</td>
<td>56</td>
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<td>20</td>
<td>28</td>
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<tr>
<td>21</td>
<td>12</td>
</tr>
</tbody>
</table>

Fog thickening, the vessel went into Galveston, tied up at West foot of 22nd St. Fog thick in soon after tying up.
The engineer resigned at the close of this day.

Feb. 18 Sunday. No work.


Feb. 20 Tuesday

Feb. 21 Wednesday. Fog lifted a little in the afternoon, and the shrimp trawl was tried with the result at Bolivar Roads, in several places. Two or three small shrimp and a few small fish. The only result. The fishermen are getting nothing inside now, but expect shrimp in by March 1st, and a run all through March. Got an engineer today, but the engine is in such bad shape he couldn't start it.

Feb 22 Holiday. Working on engine all day. Thick fog.

Feb 23 Friday.
Saw Capt. Boneville, Coast Survey, the Capt. Sec. of the Commercial Assn., and a member of fishermen.

Feb 24 Saturday. Working on engine all day. Thick fog. Saw Mr. Hitt, S. Hitt, Capt. of the Commercial Assn., who offered any help in his power, and expressed a great desire for a battery here.

Feb 25 Sunday. Working on engine all day. Fog.

Feb 26 Left Galveston 2 PM. The surface temp at noon at what for the past few days has been as follows:

<table>
<thead>
<tr>
<th>Date</th>
<th>Temp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb. 17</td>
<td>52°</td>
</tr>
<tr>
<td>Feb. 22</td>
<td>56°</td>
</tr>
<tr>
<td>18</td>
<td>52°</td>
</tr>
<tr>
<td>23</td>
<td>60°</td>
</tr>
<tr>
<td>19</td>
<td>56°</td>
</tr>
<tr>
<td>24</td>
<td>61°</td>
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<td>20</td>
<td>55°</td>
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<tr>
<td>25</td>
<td>64°</td>
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<tr>
<td>21</td>
<td>58°</td>
</tr>
<tr>
<td>26</td>
<td>64°</td>
</tr>
</tbody>
</table>

The water between jetty was green, with little wind as we went out, indicating the recent inflow of warm water 3:33 PM. Stared Sta 10489 with the following operations of shrimp trawl.
Haul A. 1/2 miles S.W. from S. jetty, 25 ft., eastward 2 miles to 40 ft., brown mud and sand bottom, 45 minutes. 60 medium to large shrimp, 3 small shrimp, 134 small fish, 47 " trout, 4 white, (2 large & 2 small), 4 butterfish, 4 tongue-fish, 2 anchovies, 1 cutlass, 1 euphycis, 7 small squid.

Haul B. 4:30 P.M. 2 1/4 miles SE from S. jetty, 40 ft. south eastward 2 miles to 40 ft., sticky bottom, 1 hour. 1/2 bushel large shrimp, 1 bucket fish, as follows:
219 Stilijes, 189 small trout, 13 " croakers, 12 " whitefish, 6 " deflection, 4 cutlass, 1 bandilla, 2 butterfish, 1 cat, 1 robins, 1 butterfish, 1 anchovies, 2 tongue-fish, 4 small flatfish.

Haul C. 4 1/2 miles SE from South jetty, 40 ft., E by S. 1/4 S. 2 1/2 miles to 45 ft., sticky bottom, 1 hour. 42 very large, 4 small shrimp, 1/2 bushel fish, as follows:
1 black drum, 77 cm long, wt. 6 1/2 lb., 188 small trout, 13 " whitefish, 3 large spot, 47 small croakers, 4 cat, 2 anchovies, 40 Stilijes, 8 deflection, 1 small pinfish, 1 " shad-fish, 2 robins, 1 lizard-fish, 34 small menhaden (saff), 1 halibut, 1 tongue-fish, 5 small flatfish, 1 sting ray.

Haul D. 7 P.M. 7 miles S.E by E from S. jetty, 48 ft. East, 2 1/2 miles to 54 ft. hard sand bottom, 1 hour. 2 large + many small shrimp, 53 small trout, 1 Stilijes, 4 cat, 1 pinfish, 9 whitefish, 1 deflection, 4 croakers, 5 euphycis, 4 shad fish, 8 small flatfish, 1 halibut, 1 " stingray, 2 large spot, 1 conch.
Haul E 8:05 P.M. 8 1/2 miles ESE from South jetty, 50 ft.
ESE 2 miles 15 52 ft., head wind, 1 hour.
2 large + many small shrimps
7 good sized Whiting
29 small hake
2 large hake
2 sm. croakers
3 - sheepshead
2 - lizardfish
1 - robin
5 - halibut
5 - croakers
1 - Brotulidae
1 - Shad
1 - Stingray
33 - small flatfish
8 - tongue fish
1 - Ancephalota
A few small crabs etc.

Haul F 4:27 P.M. 11.45 am. 15 miles SW by S from South jetty
42 ft. mud & sand, ESE 2 1/2 miles to 51 ft. 1 hour.
5 large + many small shrimps
110 - small hake
1 - Brotulidae
5 - croakers
2 - croakers
3 - hake
59 - small flatfish
11 - good Whiting
2 - small hake
1 - carmen
5 - sand lances
9 - Spadefish
1 - Ophychtopharynx
1 - Robin

Haul G 6:34 am. 16 miles S by W from S. jetty, 60 ft., southward
2 1/2 miles to 55 ft. - mud, 50 minutes
8 - small shrimps
1 - Shack (Scolithodes, 8 63 cm.)
20 - small hake
2 - Whiting
4 - croakers
3 - lizard
1 - Brotulidae
2 - Spadefish
1 - Porichthys
2 - small flatfish
A few squid

Length & Weight of Great C. Cotton
18 - 43 grams
19 - 53
19 - 58
19 - 65
19 - 85
20 - 75
20 - 95
20 - 100
20 - 120
27 - 212

The great variation in the
same sized fish caused by stomach
content.

Length & Wt. of Whiting
23 cm. 135 grams
24 - 170
Haul J. 10:40 AM. 3 1/2 miles SE by S. from South jetty, 25 ft. E 1/2 N. 2 1/2 miles to 45 ft. sand. 1 hr.
2 baskets shrimp = 399 shrimp, wt 12.25 lb.
A few small fish, practically the same as haul I.

Haul K. 11:45 AM. 5 1/2 miles SE by E 1/2 E from S. jetty, 40 ft.
E 1/2 N 2 1/2 miles to 46 ft. sand and rock.
1 1/2 baskets fine large shrimp.
1 bucket fish, same as before.

Haul L. 12:50 PM. 8 miles E by S. by S. from S. jetty, 46 ft.
E 1/2 N. 1 3/4 miles to 45 ft. sand. 30 min.
31 large shrimp + a few small.
3 Whiting
16 Trout
5 Wolfish
1 Deflection
13 Small Croakers
18 Sticklefish
1 Barnacles
2 Spanish fish
1 Small Flounder
1 Sigar fish
A few squid

Haul M. 310 PM. 1/2 miles N W. of N jetty, 20 ft. NE 1/4 miles to 30 ft. sand and rock. 45 min.
Cook-out came loose in landing catch, and all was lost except 2 black drum. A few shrimp were seen.
Black Drum, hard 7 82 cm. wt 7 1/4 lb.
Rope 8 88 " 9 1/4 "
The flesh of these fish was full of large bones.
Haul N. 4 25 P.M. 3 1/2 miles N of N. jetty, 21 ft. ENE 3 1/2 miles to 28 ft. hard sand. Surface temp. 65°. 1 hour.
39 medium to large shrimp, largest 20 to 21 cm.
1/2 bucket small fish as follows.
173 small hound
20 Stilt-fish
1 Croaker
4 Whiting
1 Seabass
3 Halibut
3 Tongue
1 Relish
3 small flatfish
7 Cutlass
1 Robin
1 Byrophyis
1 small bonnet-head.

Haul 0 6 20 A.M. 2 miles E of N. jetty 35 ft. E 2 3/4 miles to 40 ft. sand.
1 bucket large to medium shrimp (234 shrimp, at 6 kg)
1/2 bucket fish as follows.
17 Stiltfish
11 flatfish
9 small flatfish
3 Relish
14 Whiting
83 Stiltfish
9 Anchovy
12 mullet
5 croaker
12 smelt
10 trout
70 cutlass
1 bigeye
5 cutlass

Pair tag numbers for Sta 10469:
1075
7 12 Smelt
8 1 Shad
9 1 Ray
60 0 Byrophyis
2 0
3 12 Smelt
4 12
5 0 Byrophyis
6 0 Whiting
7 10 Mixed
8 0 Flatfish
9 12 Smelt
70 9 Byrophyis
1 6 Mixed.

At the conclusion of this station it was decided,
as we had not enough shrimp to return to San Pedro,
to start the off-shore sites with the otter trawl.

Feb. 28 9 30 to 10 50 A.M. Started Sta 10770. Made Sta:
Haul A. 10 20 A.M. 8 1/2 ft. sand, broken shells.
Otter trawl 1/2 hr.
29° 03' 99° 26'
Many small cutlass fish.
16 small Byrophyis
550 feet: 12 Byrophyis
TT 10772 4 10773.

Haul B. Noon 1/2 hr. 9 fast yellow sand,
at 29° 16' long 99° 04'.
14 small 2 smelt
2 Small trout
2 Stiltfish
March 1

Wade C. 8th 5:50 AM 29°07' 94°15' Sander
Broken shins 7 fath. 45' min.
1. Small octopuses

Wade D 8 AM 29°10' 94°05' Sander 7 fath. 9 fath.
1. Large squid. TT: 10775
2. Few small cutlass fish shells.

Wade E 29°07' 94°04' 10 fath. Sander 8 fath.
2. Cutlass fish.

Wade F 29°02' 94°05' 10 fath. 94°05' Sander 8 fath.
1. Red fish. At this haul a cloud of large squids arrived on board. Fog & rain.

1. Blue water, surface wind 66.

As there was no sign of fish about Hales Bank, the line & station of 10 deep water was started.

9:45 AM to 10:40 AM making Sta 10471 in 19 fath. Too equally for travel.

March 2

Friday 7:30 AM to 9 AM making Sta 10472, 35 fath.
1. Otariita
2. Squid
3. Robin
4. Otariita
5. Robin
TT 10771.

11:15 AM to 11:15 PM making Sta 10473, 77 fath.
1. Otariita brought up nothing but sand.

4:30 P.M. & 5 P.M. making Sta 10474 (overboard)
Fresh NNW wind & rising sea.

March 3

Saturday 8:15 AM to 9:40 AM, making Sta 10475
1. Stiff N wind, choppy sea.
2. Broked up at close of this station repel mainsail at 10 AM
3. Filled mainsail & set storm sail 12:30 PM
4. All the rest of day a hasty, short to.

Sunday

March 4

A Western, born to. Moderated in P.M. & set course for Ferris Pass.

March 5

Monday 9:30 AM Started Sta 10476 off Ferris Pass
1. Wade A. from whistle buoy N. 2 miles, 7 to 5 fath. Sander
2. Wind 45 minutes
4. Half speed medium to large shrimp
5. " fish as follows:

105 Small track 2 Horsefish
834 Stiff fish 1 Batfish
42 Paradox 1 Batfish
22 Brandling 1 Batfish
2 Whiting 2 " Squid
1 Codfish 2 " Squid
2 Cutlassfish 3 " Squid
2 " Squid 3 " Squid
1 " Squid 3 Tunicates
Haul B. 7:20 A.M., from Whistle ENE 40 minutes 7½ to 8 feet. 7½ to 8% fish.

120 Shrimp
24 Scup
7 Croakers
1 Broomtail
2 Horse-fish
2 Soft-toptail cat
1 Spot
2 sea cats
24 small trout
9 Stiltfish
1 Haddock
2 bullfinch fish
2 Whiting
1 Alewives
1 tongue-fish.

Haul C. Continuation of Haul B, 35 minutes to 8 ½ feet.
1 shrimp
1 haddock
6 trout
1 Orthopristis
1 lingcod fish
2 croakers
2 alewives
2 few black mollusks.
1 large + several small squid.

Haul D. 3:35 P.M., 15 miles NE from Anacapa light, eastward, 1 hour, 5½ to 7 feet, sand + broken shells.

27 large squid
21 medium
A very few fish + squid, all left.

Haul E. 7:10 P.M. Cavallo Pass SE NNE 5 feet, eastward to 8 ½ feet, gray sand + mud. 1 hour.

1 bushel fine large shrimp
1 " Stiltfish
1 bucket other fish, including 1 Orthopristis, 3 small roundheads, and several good Whiting, but very few small food fish in this haul. 1 Orthopristis with eggs + running.

Haul F. Cavallo Light NNW. 8:40 P.M. 55 minutes eastward, 5 to 9 ½ feet, gray sand + mud.

Nearly 1 bushel fine large shrimp
1 ½ bushel Stiltfish
Very few food fish, mostly Whiting. Little else.

At the end of this station a stiff SE blow made it too rough to fish, and there was nothing to do but start for Galveston and return.
Fin logs for Sta 10476, # 10778 - 10789 inclusive.

March 6 Tuesday. 2:30 P.M. Arrived at Galveston.

7 Wednesday. At Galveston taking stores etc. Went to Texas City + saw Mr. N.H. Bryan + Mrs. Bryan. Mrs. Bryan was very enthusiastic about the Banks work.

8 Thursday. Left Galveston 2:30 P.M.

5:20 to 6:20 P.M. Made Sta 10477 6 ½ miles SE from South jetty, leaving N.E. 1 hour.

Shrimp trash, ½ bushel large shrimp,
1 " Stiltfish
Other fish, see over.
March 9. 1:15 A.M. Started S #10478 - Brayos St. bearing NW.
10 fath 10 ft soft mud, towing SSW. 1 hour 10 fath 10 ft soft mud.

Haul A. 1 Bucket large, and many small shrimp.
1 small whiting
1 large trout
1 skate
2 small

8 small
13 large whiting
1 squid
4 small
2 tongue fish
8 small croakers
2 drummers
15b stipples
2 batfish
4 spotted
5 lepings

Haul B. Brayos St. NW by W. 1/2 W. 5/2 fath soft sand, towing N to 6/2 fath soft sand. 1 hour. 3.25 A.M.
1 bucket large shrimp. (105 shrimp to the bucket)
1/2 bucket fish, same character as haul A. With the addition of a few mackerel.

Haul C. Brayos St. NW by N 6 fath, SW to 5 fath soft sand. 5 A.M. 1 hour.
49 medium to large shrimp
1/2 bucket fish, same character as haul A.
2 bushels large jelly fish.

Haul D. 6:15 A.M., continuous from Haul C. S by W to 7 1/2 fath soft mud. 1 hour.
1 bucket medium to large shrimp (200 shrimp, bucket not quite full).
3/4 bucket fish, same character as haul A. Except no flatfish. 15 mackerel.

Haul E 8:40 A.M. From Brayos Whistle every NNE to 5 fath. soft sand. 45 min.
6 medium shrimp
A few small whiting and trout
A few stipples
2 bushels large jelly fish

Haul F. 11:05 A.M. South from San Luis Pass. 8 fath. blue sand and fine sand, towing NE 40 minutes.
To 7 1/2 fath.
1/2 bucket fine large shrimp
1 bushel stipple

Very few other fish, including a few mackerel.
Fresh E large, t living near Edwards.
Haul G., continuous with F, North to 6 3/4 fath.

Wave increased. 1 hour.
44 medium shrimp
1 bucket stiltfish
1 bushel large jellies
Practically no other fish.

Weather threatening, returned to Galveston, arriving at 5 p.m.

Stations for Sta. 10478: 10790 - 10798 inclusive

March 10 Saturday. Cleaning ship, drying out, and minor repairs to engine.

March 11 Sunday. No work.

March 12. Repairing rigging, taking stores etc.

March 13 Repairing rigging and overhauling deck engine.

March 14 Ready for work, but stiff NE wind prevented.

March 15 Thursday. Ready for work, but thick fog and calm prevented.

March 16 Friday. Left Galveston 7:30 A.M. Light S.E. airs and a small choppy sea. Went to lightship, landed pares, and delivered to the captain of name.

2 light-hams and 400 lbs salt, to be used in the curing of shark skins.

Speed of vessel from wharf to lightship exactly 4 miles per hour. Reached light 4:15 P.M.

6:55 P.M. arrived at Sta. 10479, 11 miles SSW from Neahd lightship. Surface temp. 66°.

Towed shrimp trawl ENE, 9 fath. sand gravel around to 10 fath. 1 hour.
Not contained 3 buckets of fish. A second haul had just been started, when a small tender hit us and stopped operations. Took all night under sail and power to work back under the land.

Fish as follows:
108 Chubsters, ribs, nearly all 7
11 Trout, nothing 8 fath. 3D. 7 fath. 2 small.
13 large hogs
1 small croaker
3 Oyster
7 Platfish
4 Whiting
11 Bullhead
9 Robins (2D.
11 Sunnards (2D.
2 Grubs
25 Anchovies
39 small Flatfish
3 Brotulas
3 Sardines (2D.
2 Sea cat
3 Morays
Many small shrimp, crab and shells

March 17 Thursday. Reached wharf at Galveston 8 A.M. Weather very threatening all day. In the early evening there was a reflection of the North.

March 18 Sunday. At Galveston. Learned that a tug was lost off Aransas in the storm which hit us Friday night.
March 19  Monday. Taking stores, gasoline etc for the
run cast to Boca Grande. Vouchers delayed us,
then being little wind & that adverse, postponed
departure until tomorrow.

March 20  Got away from Boca Grande 11.00 A.M.  Stiff SSE
breeze and choppy sea.
12.30 P.M. Made Sta 10480, 1/2 miles E from
Boca Grande, so bad, tacking ESE 45 minutes with
shrimp trawl.
80 large shrimp
94 Stiltfish
32 Trout (small)
6 Croakers
2 Whiting
1 Needlefish
1 hairtail fish
1 small Flatfish
2 anchovies
3 small sardines

Too rough for trawl so proceeded on our course,
E by S.

March 21  Wednesday. Proceeding on course for S.W. Pass, choppy
sea, light S.S.W. sea. Started engine 6.30 P.M.
Woolly gulf weed. Engine running all day.

March 22  Thursday. Light SSE breeze, smooth sea, clear.
Large school of porpoises at noon. At 3 P.M.
many pelicans about, but no signs of fish.
Nothing done all day yesterday and today
without result.

March 23  3 P.M. Surface 90°
4 P.M. " 65°
5 P.M. " 52°5' Approaching SW. Pass. Tuesday.
6 P.M. " 53°
1 mile E from lightship, surface 66°
9.45 P.M. 11 P.M. making Sta. 10481

March 23  4.30 A.M. to 7 A.M. Made Sta 10482, + proceeded
to Pensacola, for repairs to engine.
The dredging win being played out, and badly
frayed, condemned it and threw it overboard.
Replaced it with the Sessa win, which was in better
shape, but better than the old one.
E.S.E. breeze, fine & clear. Worked all day without
result.
2 P.M. Passed a tremendous school of porpoises,
estimated to be more than 300, and perhaps
twice that number.

11.30 P.M. Entered Pensacola Bay + came to an
anchor at Pensacola at midnight.

March 24  Saturday. Took engine parts to shop. Saw Mr.
Wells of E.E. Saunders & Co, and had a long
talk with Mr. Taylor of the Wrenn. The latter
was much interested, and very reminiscent of the
early days of the Fish Commission.

March 25  Sunday. No work.

27. Tuesday.

28. Wednesday. Engine repairs completed at 1 P.M. left Pensacola 1:30 P.M. Wind fell light and engine ballasted again going down the bay. Did not get outside until 4 P.M. 3/4 to 4:30 P.M. made Sta. 10483. in 6 fathoms and steered from Pensacola out to bay. Hauled shrimp tractor 1 1/4 hours. Bottom sand bottom, taking only 3 robins, 2 lizard fish, 1 skate + a few squid, a large batch of squid eggs + a few sand dollars + stars. TT 10806 - 10810 inclusive.

29. Thursday. 5:30 P.M. to 7:30 P.M. made Sta. 10484. Bottom bottom, shrimp tractor getting only 1 small flatfish + 4 stars. TT 10811.

30. Friday. 8 P.M. to 9:15 P.M. made Sta. 10485.

31. Saturday. 9 A.M. caught trolling 1 Gymnosarda collei #, 57 cm. wt. 2130 grams, haddock. TT 10812. Stomach contained a few small fish and a squid. Noon, saw a large school of flying fish. 3:30 P.M. off Egmont Key about 10 miles. 4 P.M. caught trolling 1 Spanish Macrein 3, tests uncollected, stomach empty, 71 cm. long.

Sunday. 6:30 A.M. anchored at Boca Grande. Went up to town + saw several fishermen. All fish scarce since the big storms last fall. 3 tarpon caught yesterday still fishing on the flats. None being taken in the pass. Mullet very scarce. Gt. a few shrimp being taken with lights and dipnet under the phosphate wharf. This is very unusual, as shrimp are seldom taken here.

April 1. Monday. Made several hauls with shrimp trawl about the harbor, with negative results. Bottom very barren, + hardly any fish. Made 3 seine hauls on the beach outside phosphate wharf. Young Pomolobus very abundant. Received several hundred. Saw Dr. Atwood, who expressed interest in our work, and hoped we could come back soon with a better outfit.

April 2. Tuesday. Left Boca Grande 6 A.M. Passed 14 boats tarpon fishing in the Pass. 7 A.M. to 7:45 A.M. made Sta. 10486 at Boca Grande cut bay. Shrimp trawl 45 minutes, yielded as follows:

- 188 small grunt
- 291 " red mullet (scudder)
- 4 Bullhead fish
- 4 Carangids
- 2 Barnards
- 2 Puffers
- 3 Bifiction
- 8 fish fish
- 2 Mogomers
- 4 Orthonotus (1 rip 0)
- 2 Sea cats
- 3 squid
- 2 medium sized shrimp

TT 10813 - 10815
The gutes measured as follows: the larger ones had ripening sexual organs.

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2 to 3 P.M. many schools of fish in sight. They looked like mulbarden, but seemed a little too silvery and moved too rapidly.

6 P.M., Bottom, caught 1 Camanch ctypos, 53 cm long.

Apr. 14. 4 A.M. to 5, 10 A.M. made Sta. 10487, 20 miles N.W. from Key West. W. Passage, in 11 fath. Shrimp, bird tow on obstruction, taking only 1 large fish and 3 small flatfish, TT 10816