

Brought to the General Albert Leger  
Chief Signal Officer of  
the U.S. Army  
and from  
James Rawson



# REPORT

136

UPON

## THE RAINFALL OF BARBADOS,

AND UPON

ITS INFLUENCE ON THE SUGAR CROPS,

1847-71,

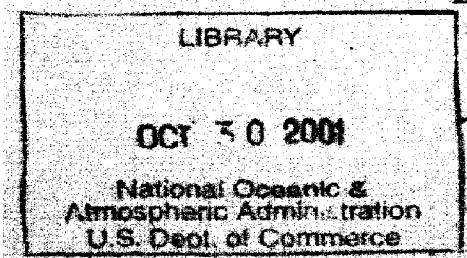
WITH TWO SUPPLEMENTS, 1873-4,

BY

GOVERNOR RAWSON, C.B.

*Presented to, and ordered to be printed by, the House of Assembly of Barbados.*

BARBADOS.



1874.

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1847-1874

**National Oceanic and Atmospheric Administration**

**Climate Database Modernization Program**

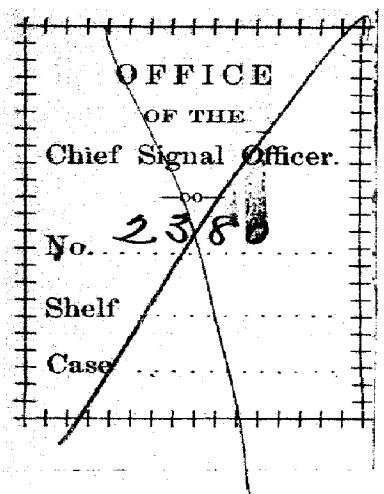
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**ERRATA.**

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**Page 2** Line 10. For "from" read "for."

**3** " 13. For 80 read 8°

**4** " last but one. For " 20" years read " 21."

**34** Para. 99. add. 5 to 4 a wet March—bad

7 " 7 dry do. average"

**57** Height of *Hilton* for 280 read 264 (lately corrected)

**62** See note 2 at P 57.

	In Column for January, transfer	·52	from the 21st	to the 25th
	February	·30	" 3rd	" 10th
		·97	" 11th	" 16th
		·60	" 17th	" 21st
	March	·12	" 1st	" 8th
		·84	" 9th	" 16th
		1·04	" 17th	" 22nd
	April	·74	" 1st	" 12th
		·42	" 18th	" 19th
	May	1·20	" 1st	" 6th
		·49	" 7th	" 8th
		·11	" 8th	" 12th
		·11	" 13th	" 14th
		·42	" 15th	" 16th
		·05	" 17th	" 25th
		·86	" 27th	" 31st
	June	·80	" 8th	" 9th
<b>63</b>	July	·10	" 6th	" 7th
	August	·40	" 2nd	" 3rd
		1·50	" 4th	" 7th
		·23	" 8th	" 9th
	September	·50	" 8th	" 9th
	October	·85	" 2nd	" 4th
		·55	" 20th	" 25th
	December	·72	" 1st	" 2nd
<b>64</b>	February	·10	" 8th	" 11th
<b>68</b>	January	·20 in 3rd Col.	" 29th	" 31st
<b>70</b>	May	3·77	2nd "	14th "
				22nd

<b>101</b>	On July 9—Column A, for	" 1 "	read	" 1 · "
<b>103</b>	" 23	do.	" 1·70 "	" 1·80 "
	Septr. 25	do.	" 27 "	" 37 "
	Decr. 26	do.	" 14 "	" 22 "
<b>108</b>	April Total	do.	" 1·85 "	" 1·58 "

## ON THE RAINFALL OF BARBADOS.

Sufficient information has now been collected with regard to the Rainfall of Barbados, to allow of very accurate conclusions being drawn from it respecting the experience of past years, and of reliable calculations being formed as to future seasons, and as to their influence upon the Sugar Crop, the staple product of the Island.

2. These data, and the inferences to be drawn from them, have a special interest for the Planters and inhabitants of Barbados. But they have also a wider and more general interest; and as the collection and examination of such data in detail have been rarely prosecuted, and seldom elsewhere under such advantageous circumstances, I shall endeavour to make this memoir useful not only to those for whose benefit the work of compilation was originally intended, but for the information of those whose superior acquaintance with the laws of nature may enable them to draw precious grains of knowledge from the abundant sheaves which I hope to place at their disposal. For their guidance and assistance it will be necessary for me to enter into some preliminary details, with which many of my readers in this Island will be, more or less, familiar.

3 Monthly entries of the Rainfall of the previous month, systematically collected, recorded, and digested, have been published in the Government Gazette of this Colony since January, 1870. From the commencement of 1871 they have been accompanied with the Rainfall of the corresponding month in the preceding year, and in a series of past years, and with a monthly series of Meteorological observations taken by Dr. R. BOWIE WALCOTT at his residence in the Parish of St. Joseph. Since May 1871, notes have been added, shewing the principal features of the month's Rainfall, and the probabilities, or expectation, of the coming month. The usefulness of these has been sufficiently appreciated to render it unnecessary to urge the necessity of keeping them up when the volunteers who have been engaged in their preparation shall be prevented from continuing it.

4. Very few records exist with regard to the Rainfall of this Island before 1847. Dr. HILLARY, in his interesting volume on the Climate and Diseases of Barbados, published in the middle of last century, gives monthly Returns of the readings of the Barometer, Thermometer, and Raingauge, at single Stations, for each month of the years 1753 to 1756; and Dr. DAVY in his valuable work on the West Indies, published in 1854, gives the monthly and annual Rainfall taken at St. Ann's in the seven years from 1846 to 1852.

5. The close correspondence of these with one another, and with the average of 25 years from 1847 to 1871, is remarkable, taking into account the following qualifying circumstances. St. Ann's is the lowest and driest Station in the Island; it lies to Leeward, and is only 28 feet above the sea. Gunhill, where, it is supposed, Dr. HILLARY's Raingauge was placed, is 728 feet above the sea, and the District in which it is situated shows an average of several inches above that of Christ Church, in which St. Ann's is situated. The influence of elevation is fully shown in a subsequent part of this Report. With regard to the longer average of years, it contains a large and varying number of Stations in all parts of the Island, and may be accepted as a fair approximation to the correct mean of a quarter of a century:

		Inches.
*Dr. Hillary.	Average of 4 years.	1753—56      55.89
†Dr. Davy.....	7 —	1846—52      54.18
†† .....	25 —	1847—71      57.74

6. It is worthy of note that in the short period recorded by Dr. HILLARY, a lighter and a heavier yearly Rainfall occurred than in any of the 32 years above cited;—that they followed one another—viz.: 38.12 inches in 1753, and 87.01 inches in 1754; and that the excess in the latter was mainly caused by a fall of 19.78 inches in June, which has rarely been equalled, at any Station, in any month of the other 32 years, and was reported by Dr. HILLARY as being greater than was ever before known. It occasioned

\* In 1753—38.12  
1754—87.01 { Average 55.89 inches.  
1755—57.29  
1756—41.06

+ In 1846—65.13  
1847—43.36  
1848—57.80  
1849—45.22 } Average 54.18 inches.  
1850—73.62  
1851—47.24  
1852—46.92

†† See appendix No. 1.

destructive floods. The lowest and highest of the 32 years were 1863, when the yearly fall was 42.88 inches, and 1855, when it amounted to 77.31 inches. At the same time it must be pointed out that at several Stations of an equal, or superior, elevation to Gunhill, a Rainfall exceeding 90 inches has been recorded in two or more years at the same place within the last 20 years, and in one instance a lower Rainfall than 38 inches. No inference, therefore, can be drawn as to the existence of any change of climate during the century.

7. The earliest record during the present century of which a Return is available is from *Fairfield*, in the Parish of St. Philip, which was kept by the late Mr. BRYAN TAYLOR YOUNG from the years 1843 to 1850. At the latter date it was taken up by the proprietor of a neighbouring estate, *Halton*, and has been continued regularly to the present time. In 1847 it was commenced at *Haynes Field*, in St. John's, and at *Husband's*, in St. Lucy's; and in 1853—4, through the exertions of the Agricultural Society, which supplied Gauges to persons willing to make and record their observations, the number was largely increased—and monthly Returns were published regularly in the journal of the Society up to the year 1861. Since then they have been collected and published in the *West Indian* by the late Secretary to the Society, Dr. R. BOWIE WALCOTT.

8. In 1869 an impetus was given to the collection of Returns and to the Establishment of new Stations, and early in the year 1870, the Government undertook to employ the Police in collecting the Returns regularly, and to publish an abstract of average results, in the several districts of the Island, classified with regard to its natural rather than its municipal Divisions. In none of these Districts are there at present less than 16 Stations, while in one there are as many as 51 of them.

9. Some information with regard to the natural circumstances, which influence, more or less, the Rainfall of Barbados, and with regard to the division of it into districts, for the purpose of this inquiry, are here inserted, for the use of those who are not acquainted with either.

10. Barbados is an oblong Island, of greater length (from North to South), than breadth, say—21 by 14 miles. Its area is 166 square miles, or 106,470 acres. It is situated in N. latitude, 13 deg. 4 min., and W. longitude, 59 deg. 37 min., about 80 miles outside, and Eastward, of the belt of Islands forming the Windward, or more Southern, portion of the group which encircles the Caribbean Sea on its Eastern side. The greater part, about seven-eighths, consists of a succession of limestone and coral terraces, the sides of which often bear evidence of having once been shore cliffs, and resting upon a clay foundation. These do not rise in the highest point above 1,147 feet.\* This part is intersected by numerous ravines and gullies. The primitive forests, of which there are both physical and historical evidence, have disappeared. Scarcely a vestige of them remains; and outside of Bridgetown, with the exception of a few acres of wood in two or three parts of the Island, several small copse of young mahogany trees, the remnants of alleys of cabbage palms, and small clumps of ornamental trees surrounding most of the country residences, the Island is denuded of trees. It presents one vast cultivated field, undivided except by roads, planted with Sugar Canes, or Grain and Root Crops, with rare and very small patches of pasture land, covered with Sour Grass, on most of which the soil is too scanty for cultivation. Of Lakes there are none—Streamlets, scarcely any; the Ponds, once numerous, are rapidly disappearing, being exhausted and taken into cultivation.

11. The smaller portion, which is on the windward side, differs in the absence of the horizontal limestone and coral strata, in its irregular and broken structure, resembling "a miniature alpine country." Its aspect, surrounded by the limestone and coral rocks of the highest section of the Island, which assume in many parts the abruptness and height of Cliffs, is as if the calcareous superstructure had been torn off, and cast out of sight, by some convulsion of nature, possibly Volcanic,—as if the foundation of the whole Island, had in this part of it been left bare, and had assumed its present superficial appearance from the action of the weather through successive centuries. Coralline boulders remain on the beach and elsewhere, but whether they formed part of the original covering of this district, or have rolled down from the Cliffs still overhanging it, may be a question.

12. The Island is exposed to the Trade Winds, varying but slightly from N.E., during three-fourths of the year. The Rain comes chiefly from the same quarter, but at certain seasons occasional shifts of Wind to the S. W. and N. W., bring with them heavy showers, which generally do not reach the windward side. The Island lies nearly in the latitude in which the circular storms of the northern hemisphere are supposed to be generated. The majority of them assume their destructive force to the northward of the Island, or pass by it to the North-east. Few comparatively have swept the Island in their westerly course, or recurred upon it from the North-east. Fewer still have passed by it to the Southward.

\* Height of Mount Hillaby by old survey, reduced to 1,104 feet by the recent trigonometrical survey of Staff Commander Parsons, R. N.

13. There is little in the surface of the Island to attract, or to promote the generation of, rain. The faces of terraced cliffs of coral rock are likely to increase the rain-fall in their immediate neighbourhood. But for the most part the rain-fall depends, apart from elevation, upon the exposure of the land to those winds, which at different seasons of the year strike the Island laden with moisture, and discharge their burthen on the lands which they first meet. It happens very rarely that rain falls over the whole Island at the same time, or in equal proportions.

14. The annual and diurnal variations of the Barometer are slight. The latter may be stated at 0·057 inch from 10 a.m. to 4 p.m. The temperature is very equable. At Binfield, in St Joseph's, which is to Windward, at a station 1,107 feet\* above the sea, the mean of all highest observations throughout the years 1868-72 was 79·4, and the mean of all lowest 71·4. The highest temperature during that period was in September, 81·2; the lowest, in January and March, each 68·8. The mean daily range was 80.

15. For the purposes of the present enquiry, and in the monthly Tables, the Island has been divided into six districts, of which three form the Windward, and chiefly Highland, portion of the Island, and the other three form the Leeward and Lowland portion. The former, which has an area of less than a third of the Island, includes Scotland and parts of St. John, which are not Highland, and which have a low average rain-fall. In examining, therefore, the influence of elevation upon the rain-fall, this section must be separated from the Highland division of the Island, as will be shewn hereafter. It has however been found convenient and instructive to divide the Island into two great Sections, the Windward and the Leeward. The parts of parishes falling within each district are distinguished, so that the materials for calculating the average of parishes are accessible.

16. The first district, occupying stations below Cliff, includes the Parish of St. Andrew, and those parts of St. Joseph and St. John, which are below the Cliff. It contains an area of about 12,000 acres, or 19 square miles. Only one Return for past years earlier than 1870, has been obtained from this district, and that for a short, and not, recent period, viz., the years 1853-9. At present, monthly Returns are obtained from 16 Stations, spread over the whole length of the District, and furnishing a fair average.

17. The second District, constituting the Windward Highland, comprises the remaining portions of the parishes of St. Joseph and St. John, being the parts above Cliff, and extending over an area of about 11,000 acres, or 17 square miles. Annual Returns for different periods, varying from 5 to 25 years, have been obtained from 9 Stations. The present number of monthly Returns, from Stations well distributed over the whole District, is 29.

18. The 3rd District, constituting the Central Highlands, embraces the upper and highest portion of the two Parishes of St. Thomas and St. George, with portions of St. Peter and St. James, and one Station in St. Philip, which ought properly to have been included in the 2nd District. The area may be taken at 12,000 acres, or 19 square miles. The annual Returns obtained are 8, extending over the period between 1853 and 1871, and varying from 5 to 15 years. The present number of monthly Returns is 26. The Stations are well distributed.

19. The above three districts constitute the Windward Section of the Island, with a small portion of the Highland parts of St. Peter and St. James, on the Leeward side. It would also be the Highland portion, were it not that it includes the district below Cliff, which belongs to it geographically, but not "pluviometrically." They comprise nearly equal areas, amounting to 35,000 acres, or 55 square miles, just one-third of the whole Island. The Stations are 71 in number, or about 4 to every three square miles.

20. The 4th District, constituting the Leeward Lowlands, comprises the Parishes of St. Lucy and St Michael, and those of St. Peter and St. James, with the exception of a small portion of each included in the Central Highlands. A portion of St. Lucy is really to Windward, but it cannot be grouped with the 1st District, and it is too small to form a District by itself, while the number of Stations in it is too small to require its separation from the remainder of the Parish and District. The area of the latter is large, about 33,000 acres, or 51 square miles, and nearly equal to the whole of the three preceding Districts. The number of annual Returns obtained has been 12, extending over more or less of the years from 1847 to 1871, and varying from 4 to 25 years. The present number of Stations furnishing Returns is 34. It might be advantageously increased, especially in St. Lucy and St. James.

21. The 5th District forms the Central Lowland part of the Island, and comprises the less elevated parts of the Parishes of St. Thomas and St. George. Its area is about 10,000 acres, or 15 square miles. The annual Returns are 9, extending back to 1856, and varying from 4 to 14 years. The present number of monthly Returns is 22. The lower part of this District adjoining Christ Church is not sufficiently represented.

22. The 6th and last District, comprising the Southern Lowlands, contains the two large Parishes of St. Philip and Christ Church, with the exception of one Station, which is included in the Central Highlands, and of another which, being situate partly

\* By old Survey—See Note at Page 2.

in St. John's, above Cliff, is included in that Parish. The eastern part of St. Philip is to Windward, but for the reason assigned with regard to the portion of St. Lucy, which is similarly placed, it has not been separated. Its area is about 29,000 acres, or 45 square miles. This District has furnished 16 annual Returns, one commencing in 1843, and varying from 7 to 30 years. The present number of monthly Returns is 51,—27 from St. Philip, and 24 from Christ Church,—the whole District being well represented, except the north-eastern portion of Christ Church.

23. The last 3 Districts form the Leeward section of the Island. It comprises about two-thirds of the entire area, and the whole is Lowland. For the purpose of contrasting the Highland with the Lowland portions, in order to ascertain the effect of elevation, the first district should rather be united with this section, or at all events omitted from the other. The question of Elevation will be discussed in its place. The Stations in this section are 107 in number, averaging nearly one in each square mile.

24. The total number of Stations is 178—which, as the total area is 166 square miles, gives on an average more than a Station to each square mile.

25. The subject matter divides itself into two heads.

1st. The Rain-fall and its distribution.

2nd. The influence of the Rainfall upon the staple production of the Island.

The former is a matter of interest, chiefly to the meteorologist, and investigator of Natural Science, universal but speculative, unless applied to practical purposes, as has here been attempted—the latter is of the utmost importance to the proprietors and inhabitants of Barbados, as it is well understood, and will in this paper be clearly shewn, that the sole staple of the Island, the Sugar Crop, depends mainly upon the rainfall, and that its quantity may be calculated very closely before hand by the rainfall.

26. Barbados offers an exceptional opportunity for making this calculation. The sole staple is the cane. Root and grain crops are cultivated, even in most of the laborers gardens, only as fallow to the canes. Almost all the sugar that is made, probably within two per cent, is exported. For some years past the greater portion of the Island has been under cultivation. A nearly uniform system has been adopted. The progress of manufacturing the sugar is nearly the same. Improved systems have been introduced to a limited extent, and increased attention to existing processes is of recent growth. The production therefore is capable of measurement. Its quantity is affected but slightly by other influences than those of the weather, and of these, without ignoring the importance of favorable seasons for ripening and reaping the crop, in producing which, however, the rainfall plays an important part, the quantity, time, and distribution of the rain-fall, are incomparably the most momentous. The investigation of these, with a view to the advantage of the inhabitants of all classes in Barbados, is the principal object of this Paper. The discussion of the scientific questions connected with it, is subsidiary; but it must precede, as it forms the foundation of the latter. Speculation will be avoided as much as possible, in order that no suspicion may attach to the exposition of facts.

#### 1. YEARLY RAIN-FALL.

27. The mean of this for Barbados is established, on the average of the last 25 years, at 57·74 inches, upon very ample data, which are shewn, and tested, in Appendix No. 1. This Table displays in a remarkable manner, the correctness of the results to be obtained from striking averages; and as many of the following statements are derived from such calculations, it may be well, at the outset, to show that they may be relied on.

28. When this enquiry was first commenced, in 1870, it was only possible to form a mean of 23 years, viz. from 1847 to 1869. This was obtained from annual averages, commencing with 3 Stations in 1847, and ending with 45 Stations in 1869. Its correctness as an annual mean, was tested by two calculations from different data and for different periods. The first of these was from the annual average for 19 years of 4 Stations, placed, as it were, at the four corners of the Island, and consequently affording a fair average of the whole, viz. Husbands, Grand View, Halton, and Binfield. The other (which was adopted only because the data existed), was from the annual average for 10 years of 12 Stations, 6 in the North, and 6 in the South of the Island. The coincidence of the results is very striking:

Mean of 23 years, 1847-69, from 3 to 45 Stations—58·32 inches.

" 19 "	1851-69, from 4 Stations—	58·40 "
--------	---------------------------	---------

" 10 "	1860-69, " 12 "	58·56 "
--------	-----------------	---------

A similar comparison, adding the two years since expired, 1870-71, the latter of which has been of an exceptional character, is shewn in the same Table, and the results are scarcely less remarkable, although, in the case of the smaller number of Stations, there is a somewhat greater difference, but still not more than 1·5 per cent:

Mean of 25 years, 1847-71, from 3 to 141 Stations—57·74 inches.

" 20 "	1851-71, " 4 "	56·85 "
--------	----------------	---------

" 12 "	1860-71, " 12 "	57·81 "
--------	-----------------	---------

29. In Appendix No. 4, the yearly Rainfall of the Island for the years 1843—46 has been calculated from the Rainfall of a single Station, taking the same proportion that it bore to the average of the other three Stations in the years 1847—50, when all the data were available; but as the results for those years have been estimated and not observed, they have not generally been made use of in the calculations now presented.

30. The following particulars regarding the yearly Rainfall during the above period of 25 years, 1847—71, are of interest:—

1°. The Rainfall of Fifteen years was above the mean of 57.74 inches, and that of Ten was below it. (Appendix No. 2.)

2°. The average Rainfall of the 15 years above the mean was 64.36 inches, and the average excess was 6.62 inches; the average Rainfall of the 10 years below the mean was 47.66 inches, and the average deficiency was 10.08 inches. (Appendix No. 8.) The order in which the years ran, distinguishing those above and below the average of 57.74 inches, was:

Years	1855.....	77.31 inch
	1861.....	73.62
	1867.....	69.93
	1853.....	68.84
	1865.....	68.64
	1850.....	67.88
	1848.....	63.77
	1857.....	60.90
	1870.....	60.17
	1866.....	59.68
	1851.....	59.40
	1862.....	59.27
	1864.....	59.19
	1852.....	58.77
	1860.....	57.91
	<hr/>	
	1859.....	54.22
	1849.....	52.77
	1854.....	50.88
	1869.....	48.52
	1856.....	48.49
	1847.....	48.10
	1858.....	45.22
	1868.....	44.60
	1863.....	42.38
	1871.....	41.46

3°. The gradual rise above the average, and the rapid fall below it are deserving of notice. The year next above the average had only 0.17 inch more rain; the year next below it had 3.52 inches less; the fourth year above had only 1.53 inch more, the fourth below had 9.22 inches less.

4°. The number of years slightly exceeding the average is large: Eight out of Fifteen exceeded by less than 10 per cent: The number of those slightly falling short of the average is small—only two out of ten: Droughts, when they happen, are heavy. This is particularly shown in Appendix No. 2.

5°. The highest yearly average was 77.31 inches, in 1855; the lowest was 41.46 inches in 1871. The former was 19.57 inches, or 33.9 per cent, one third, above the mean; the latter was 16.28 inches, or 28.2 per cent, less than one-third, below it. The difference between the two extremes was 35.85 inches.

6°. The number of years at each rate of Rainfall was as follows:—

Below Average.	Above Average.
41 inches.....	1 year
42 — .....	1
44 — .....	1
45 — .....	1
48 — .....	3
50 — .....	1
52 — .....	1
54 — .....	1
	—
Total.....	10
	—
	15

7°. The chief inferences from the above facts are that the average is more influenced by the smaller number of dry years than by the larger number of wet years, and that there have been twice as many very dry years as very wet years, viz.:

Dry		Wet	
Date	Rainfall	Date	Rainfall
1871.....	41.46 inches	1861.....	73.82 inches
1863.....	42.38 —	1855.....	77.31 —
1868.....	44.60 —		
1858.....	45.22 —		

8°. It is a further inference, that, in extraordinary years, the excess has risen higher above the mean than the deficiency has fallen below it.

9°. The excess has only twice been one fourth above the mean, and only thrice one fifth above it. The deficiency has only twice been one fourth below it, and four times one fifth below it.

10°. All the above statements serve to show that the mean Rainfall of Barbados is moderate, and that the fluctuations are not extreme.

11°. Among the suppositions sometimes entertained is that of wet and dry years succeeding in cycles of longer or shorter duration. Nothing of the kind can be gathered from the table, which for this purpose, may be safely consulted as far back as the year 1843, while the present year, 1872, will certainly be below the average, thus completing a period of thirty years, which appears sufficiently long to test any theory of this kind.

#### No. of Years.

Years.	Above average.	Below average.
1843.....	—	1
1844.....	1	—
1845.....	—	1
1846.....	1	—
1847 .....	—	1
1848 .....	1	—
1849 .....	—	1
1850 to 1853 .....	4	—
1854 .....	—	1
1855.....	1	—
1856.....	—	1
1857.....	1	—
1858 and 1859.....	—	2
1860 to 1862 .....	3	—
1863.....	—	1
1864 to 1867 .....	4	—
1868 and 1869.....	—	2
1870.....	1	—
1871 and 1872 .....	—	2

12°. The only safe inference appears to be that, if there be any normal condition, it is that of alternate wet and dry years, and that there was no order or connection between the periods of two or more successive wet and dry years, but that while wet years succeeded one another three or four at a time, only two dry years have occurred together at any time, during this period of thirty years.

13°. There has been no great difference between the first and latter half of the period of 25 years. Taking the years separately, it would appear to have been in favor of the latter half, for in the first 13 years there were 7 years above, and 6 below, the average, while in the last 12 years, there were 8 above and 4 below it. But the average yearly rainfall in the latter half was an inch less, viz.:

Average of 1847-59..... 58.19 inches.  
 " 1860-71..... 57.15 "

#### MONTHLY RAIN-FALL.

31. A statement of the average Rain-fall of each month in the 25 years, 1847-71, with the mean of each month, is furnished in Appendix No. 3. In the first four years, it is computed on the Returns from three Stations. This number rapidly increased, and the average number of Returns in 1871, was 141. From this Table the following particulars have been derived:—

Taking the average of the whole period, the following abstract shews the most interesting features at a glance:—

Months.	Average.	Rain-fall.		No. of Times.	
		Highest.	Lowest.	Above average.	Below average.
January.....	3.26	7.60	1.14	11	14
February.....	2.58	5.78	0.95	10	15
March.....	1.47	3.90	0.31	11	14
April.....	1.99	6.85	0.56	11	14
May.....	3.54	9.26	0.56	10	15
June.....	5.45	10.94	1.62	11	14
July.....	5.70	9.01	2.27	12	13
August.....	7.24	12.84	3.21	11	14
September.....	6.24	10.77	3.34	10	15
October.....	8.69	13.30	2.89	12	13
November.....	7.08	14.15	1.42	13	12
December.....	4.50	7.11	1.40	12	13
Average... ..	4.81	9.25	1.64	11	14

32. From these abstracts may be deduced—

1°. The average monthly Rain-fall is under 5 inches; the driest month is March, when the average rain-fall is about 1 inch and a-half, 1.47 inches; and the wettest is October, when the average is 8.69, under 9 inches.

2°. The heaviest average monthly Rain-fall in the 25 years, was 14.15 inches in November (1852), the lightest was 0.31 inches in March, (1862.)

3°. Of the 300 months, 134 were above their average, and 166 were below it, which is the reverse of the comparison of years, of which 10 were below and 15 above the average. The following statement abstracted from App. No. 5, shows the result of a comparison of each month, with its average in 25 years :—

Months.	Above.		Below	
	No. of Months.	Average Rain-fall.	No. of Months.	Average Rain-fall.
January..	11	4.53 inches.	14	2.07 inches.
February..	10	3.50	15	1.81
March....	11	2.26	14	1.62
April.....	11	3.47	14	1.14
May.....	10	6.25	15	2.08
June.....	11	7.93	14	3.27
July.....	12	6.99	13	4.09
August...	11	8.97	14	5.73
September	10	8.45	15	4.24
October..	12	10.88	13	6.58
November	13	9.08	12	4.90
December	12	6.10	13	3.30
Total... ..	134		166	
Average	—	6.60	—	3.36

In App. No. 6, calculated from No. 5, the per centage excess and deficiency of each month, throughout the 25 years, compared with its average, is shewn with the following result :—

	No. of Months.	Average		
		+ =	=	- =
January.....	11	14	39	36
February.....	10	15	35	30
March.....	11	14	54	28
April.....	11	14	74	42
May.....	9	2 14	85	0 44
June.....	11	1 13	45	0 43
July.....	11	2 12	27	0 34
August.....	11	1 13	22	0 22
September.....	10	15	35	26
October.....	12	13	25	24
November.....	13	12	21	31
December.....	12	13	34	32
Total of years.....	14 1 10	12 0	17	

From these statements, it is apparent that it is the exceptionally heavy rains in the smaller number of months which raise the average, and the extent to which this influence

is felt in each month, and the liability to variance from the average, are shown in the following statement, which is to be read thus: The probability of August being above the average is half as great as that of May.

August.....	1.56
October.....	1.67
September .....	1.77
July.....	1.78
December .....	1.85
November .....	1.86
February.....	1.96
January.....	2.18
March .....	2.18
June .....	2.66
April .....	2.94
May .....	3.02

Proportions in which the Rainfall of the several months above the average exceeded that of the same month below the average.

4°. It is in the first six months of the years, the driest, in which this disparity is shewn. Thus in the first half-year, 64 months were above and 86 below the average, while in the latter half-year, 73 were above and 80 below it.

5°. The six months commencing with December and ending with May, are the driest of the year; the six from June to November are the wettest. In the dry season, the driest months are almost in the middle of the curve; in the wet season, the curve is reversed, but its regularity is broken by the decided excess of rainfall in October, viz—

	Dry.	Wet.
December.....	4.50 inches.	June..... 5.45
January .....	3.26	July..... 5.70
February.....	2.58	August ..... 7.24
March.....	1.47	September..... 6.24
April.....	1.99	October..... 8.69
May .....	3.54	November..... 7.08

6°. In the first column of dry months, the total Rain-fall is 17.34, and in the second of wet months 40.40 inches, the proportions of which are exactly 30 and 70 per cent. The monthly average of the former is 2.89, and of the latter 6.73 inches.

7°. The order in which the several months stand with reference to their Rain-fall, and to the average of 4.81 inches, is as follows: The regular gradation of the per centage proportion of each three months, is very remarkable.

	Inches	Per centage. Proportion of the whole year.
October.....	8.69	
August.....	7.24	23.01 = 40.0
November.....	7.08	
September.....	6.24	
July.....	5.70	17.39 = 30.0
June.....	5.45	
December.....	4.50	
May.....	3.54	11.30 = 20.0
January .....	3.26	
February.....	2.58	
April.....	1.99	6.04 = 10.0
March.....	1.47	
Total .....	57.74	100.

8°. The ordinary Quarterly divisions of the year show a somewhat corresponding result:

Rainfall in Inches.

	Average	Per Centage.			
Monthly Average of	Monthly	Quarterly	Monthly	Quarterly	Monthly.
1st Quarter	January..... 3.26				5.7
	February .... 2.58	7.31	2.43	12.7	4.5
	March..... 1.47				2.5
2nd " "	April ..... 1.99				3.4
	May..... 3.54	10.98	3.66	19.	6.1
	June..... 5.45				9.4
3rd " "	July..... 5.70				9.9
	August..... 7.24	19.18	6.39	33.2	12.5
	Sept..... 6.24				10.8
4th " "	Oct..... 8.69				15.1
	Nov.... 7.08	20.27	6.76	35.1	12.3
	Dec.... 4.50				7.8
Total.....	57.74		100.		100.

32. The following is the order of the several months as regards the highest and lowest Rainfall occurring in each of them during the 25 years—and the greatest difference between the extremes in each:

Months in order of Highest Rainfall.	Months in order of Lowest Rainfall.	Months in order of greatest difference between extremes.
November.....14 15	.31 March	November 12.73
October.....13.30	.56 May	October 10.41
August.....12.84	.63 April	August 9.58
June.....10.94	.95 Feb.	June 9.25
September.....10.77	1.14 Jan.	May 8.70
May.....9.26	1.40 Decr.	Sept'r. 7.43
July.....9.01	1.42 Novr.	July 6.74
January.....7.49	1.69 June	Jan'y 6.25
December.....7.11	2.27 July	April 5.77
April.....6.40	2.89 Oetr.	Decr. 5.71
February.....5.80	3.24 Aug.	Feb. 4.95
March.....3.90	3.84 Sept.	March 3.59

March occupies the opposite extremes of the first two columns, but the other months do not follow in regular order. Their order, however, in the first and third columns is almost identical.

33. In Appendix No 7, the several months are successively added together, so that the Rainfall of any portion of the year can be compared with the corresponding portion of any other year, and with the average of the 25 years. The following abstract shows the principal features of this Table:

Months	Average Rainfall	Highest corresponding Period in 25 years.	Lowest corresponding Period in 25 years.	Difference.
January alone.....	3.26	7.60 in 1862	1.14 in 1850	6.46
January and Feby... ..	5.84	9.91 " 1855	2.80 " 1858	7.11
Do. to March....	7.31	11.76 " do.	4.03 " 1869	7.73
— — April.....	9.30	17.25 " do.	5.16 " 1858	12.09
— — May.....	12.84	24.07 " do.	7.39 " do.	16.68
— — June.....	18.29	31.93 " 1861	11.08 " 1847	20.85
— — July.....	23.99	40.21 " do.	13.35 " do.	26.86
— — August.....	31.23	51.52 " 1855	18.61* " do.	32.91
— — Sept'r.....	37.47	60.79 " do.	27.46 " 1871	33.33
— — October....	46.16	65.91 " do.	32.64 " 1863	33.27
— — Nov'r.....	53.24	71.89 " do.	37.82 " 1871	34.07
— — December.....	57.74	77.31 " do.	41.46 " do.	35.85

34. In a series of Tables, Appendices Nos. 8 to 10, comparisons are drawn between the Rainfall of the several months in years of a different character—first the 15 years above the average with the 10 years below it, and secondly, the 3 wettest years with the 3 driest—also the 3 driest of each month with the 3 wettest of each. The following are the most interesting results:

Months.	15 years above Mean.	Average Rainfall of 10 years below Mean.	Mean of 25 years.
January.....	3.55	2.55	3.26
February.....	2.72	2.11	2.58
March.....	1.52	1.66	1.47
April.....	2.48	1.70	1.99
May.....	1.85	2.09	3.54
June.....	6.14	4.09	5.45
July.....	6.36	4.38	5.70
August.....	7.94	5.97	7.24
September.....	6.61	5.40	6.24
October.....	9.49	7.38	8.69
November.....	7.46	6.46	7.08
December.....	5.14	3.89	4.50
Total.....	64.36	47.66	57.74

35. The influence of each month in causing the excess, or deficiency, as compared with the Mean, is shown in the following Statement, in which two features are remarkable; viz.:—first, that whether in wet or dry years, but especially in the former, the month of May contributes not only the largest quantity, but the largest percentage to the excess,

\* The Rain fall of the 3 months in 1872 was still lower, only 17.94.

and that in dry years the month of March is exceptionally in excess of the Mean. The months of September and November, although they contribute so largely to the aggregate rainfall of the year, do not so much affect the excess or deficiency of wet and dry years.

## 15 Years above Mean.

## 10 Years below Mean.

Months.	Inches.	Per Centage.	Excess.		Deficiency.		Excess.	
			Inches.	Per Centage.	Inches.	Per Centage.	Inches.	Per Centage.
January...	.29	4·3	.71	7·0				
February..	.14	2·3	.47	4·5				
March....	.05	.8	—	—			.19	1·9
April .....	.49	7·3	.29	2·8				
May .....	1·31	20·4	1·45	14·3				
June .....	.69	10·6	1·36	13·3				
July .....	.66	10·	1·32	14·2				
August ...	.70	10·6	1·27	12·5				
September	.37	5·8	.84	8·3				
October...	.80	11·3	1·31	12·9				
November	.38	5·8	.62	6·1				
December	.64	9·9	.61	6·				
Total...	6·62	100.	10·08	100.			.19	1·9

36. The degree in which each month contributes to the excess, or deficiency, in wet and dry years, may be inferred from the next statements, in which it is shewn that—

In wet years : The six months from January to June, and the month of September scarcely vary from the average, while July, October, and December are as 10 to 5 above the average, and August and November are as 9 to 6 above it.

And in dry years : The months of May, July, September, October, and December, are as 8 to 2 below the average—January to March as 7 to 3, and the remaining four months, as six to 4, below it.

The corollary being that in dry years the deficiency is generally spread over the whole year, while in wet years the excess is generally confined to the ordinarily rainy season.

## Number of months above or below mean.

Months.	15 wet years.		10 dry years.	
	Above.	Below.	Above.	Below.
January.....	8	7	3	7
February.....	7	8	3	7
March.....	7	8	3	7
April.....	7	8	4	6
May.....	8	7	2	8
June.....	7	8	4	6
July.....	10	5	2	8
August.....	9	6	4	6
September.....	8	7	2	8
October.....	10	5	2	8
November.....	9	6	4	6
December.....	10	5	2	8

37. The following statement shews the preponderance of wet and dry months in each year, arranged in order according to the excess of one or the other.

Years.	Wet Months. No.	Dry Months. No.	Rainfall of the year. Inches.		
				1855.....	53.....
1855.....	10	2	77·31		
53.....	9	3	68·84		
61.....	9	3	73·82		
66.....	8	4	59·68		
48.....	7	5	63·77		
50.....	7	5	67·88		
52.....	7	5	58·77		
60.....	7	5	57·91		
65.....	7	5	68·64		
51.....	6	6	59·40		
67.....	6	6	69·93		
49.....	5	7	52·77		
57.....	5	7	60·90		
59.....	5	7	54·22		
64.....	5	7	59·19		
62.....	4	8	59·27		

## 11

Years	Wet Months. No.	Dry Months. No.	Rainfall of the Year. Inches.
1863.....	4	8	42.38
70.....	4	8	60.17
47.....	3	9	48.10
56.....	3	9	48.49
68.....	3	9	44.60
69.....	3	9	48.52
54.....	2	10	50.88
58.....	2	10	45.22
71.....	2	10	41.46

The above shows that, without exception, when there is an excess of wet months, the yearly Rainfall is above the average, but that in 4 out of 14 years, in which there was an excess of dry months, the rain-fall was not below the average. The two extremities of the scale sufficiently prove the correctness of the rule.

38. Appendix. No. 11, shews that in the 7 wettest years of the period, wet months preponderate over dry ones in the proportion of 2 to 1, viz., 56 to 28, while in dry years, dry months preponderate in the proportion of 3 to 1, viz., 63 to 21. In wet years, every month shews a preponderance of wet seasons except February and November. In dry years, every month shews a preponderance of dry seasons without exception. This is brought out in the following statement, in which the wet and dry months are ranged in order of their frequency, separately—

Months.	Wet years.	Months.	Dry years.
May,		February,	
July,	wet 6 to 1 dry	May,	
April,		June,	wet 1 to 6 dry
June,		July,	
August,	wet 5 — 2 dry	October,	
September		January,	
October,		March,	
December,		August,	wet 2 to 5 dry
January,	wet 4 — 3 dry	September,	
March,		December,	
November,	wet 3 — 4 dry	April,	
February,		November.	wet 3 to 4 dry

39. This, however, is not the measure of the quantity of rain in excess, or deficiency which each month contributes to constitute wet and dry years. This is shewn in detail for the same 7 wettest and driest years in appendix No. 12, and the following is an abstract of the result. The number of 7 years has been chosen, because there is a wide interval between the 7 wettest years, and the year next approaching to them, and although the interval is less in the case of the dry years, the same number has been chosen in order that the comparison might be complete.

Wet years.		Dry years.		
Inches of Rain.	Per centage con- tributed by each month.	Inches of Rain.	Per centage con- tributed by each month.	
Excess.	Excess.	Deficiency.	Deficiency.	
January.....	.37	2.9	.80	6.6
February....	.29	2.3	.61	5.
March.....	.34	.27	.03	2.
April.....	1.65	13.	.29	2.4
May.....	2.76	21.7	1.58	13.
June.....	2.26	17.6	2.17	17.9
July.....	1.48	11.6	1.87	15.4
August.....	1.11	8.7	.87	7.1
September...	.35	2.7	.46	3.8
October.....	1.14	9.	1.82	15.
Deficiency.	Deficiency.			
November...	.51	4.	1.10	9.1
Excess.				
December...	.99	7.8	.55	4.5
Total.....	12.25	100.	12.15	100.
Per centage excess of year over average.		21.2	20.9	

40. It is to be remarked in the above Tables—

1<sup>o</sup> That the quantity of rain in excess or deficiency, on the average of the wettest and driest years, is almost the same.

2<sup>o</sup>. That the quantity of rain in the three wet months of February, in wet years, is in excess of that of the four dry months of February in those years, and consequently, in the latter Table, only November appears deficient in quantity.

3<sup>o</sup>. In wet years the excess is not created by heavy rains in the rainy season, but chiefly by heavy rains in the dry season, viz., May, June, April and July, which supply exactly two-thirds of the excess.

4<sup>o</sup>. In dry seasons the deficiency is created by three out of the same four months, viz., June, July and May, and by October and November, which five months account for rather more than two-thirds of the deficiency. April is not an important month in dry years.

41. A similar comparison instituted between the 3 years of greatest and least Rainfall in Appendix No. 10, exhibits somewhat different results. In these extreme years—it appears that

In the wet years,—June, April, and July contributed most largely to the excess, while October and November were below the average.

And in the dry years,—October, June, and May contributed most to the deficiency while February and March exceeded the average.

42. In the same Appendix is a comparison between the 3 highest and the 3 lowest Rainfalls of each month during the whole period, which exhibits a remarkable uniformity between the percentage of the extremes, that may be found to have some significance when the laws of the Rainfall are better known. The Table is inserted here as it affords the means of measuring extraordinary Rainfalls in future years.

Months.	Years.	Average	Average	Difference.	
		of Highest	of Lowest	Inches.	Per Centage.
January.....	1848—55—62	6.44		5.16	80.
.....	1850—58—63		1.28		
February.....	1853—57—67	4.73		3.61	76.
.....	1847—58—62		1.12		
March.....	1848—49—61	3.11		2.49	80.
.....	1850—62—64		.62		
April.....	1855—61—65	5.32		4.51	85.
.....	1856—58—64		.81		
May.....	1852—53—61	8.13		7.38	90.
.....	1847—60—63		.75		
June.....	1850—67—70	10.52		8.56	81.
.....	1847—52—63		1.96		
July.....	1850—55—61	8.43		5.89	70.
.....	1847—52—56		2.54		
August.....	1855—66—67	11.45		7.42	65.
.....	1858—59—61		4.03		
September.....	1847—55—64	10.08		6.55	65.
.....	1850—52—58		3.53		
October.....	1848—60—67	12.61		8.89	70.
.....	1855—56—63		3.72		
November.....	1852—54—59	11.84		8.50	72.
.....	1849—51—67		3.84		
December.....	1848—52—61	6.93		4.94	71.
.....	1853—62—68		1.99		

43. The Appendix, No. 13, shows the number of times that each month ranked first and second, either as the wettest or driest month of the year.

Months.	Heaviest Rainfall.		Lightest Rainfall.	
	First	Second	First	Second
January.....	—	1	—	3
February.....	—	—	2	7
March.....	—	—	10	6
April.....	—	—	10	4
May.....	—	—	2	3
June.....	2	3	—	—
July.....	—	2	—	—
August.....	4	5	—	—
September.....	4	2	—	—
October.....	11	7	—	—
November.....	4	5	1	—
December.....	—	—	—	8

44. Appendices Nos. 14 & 15 should be read together. They show the quantity of Rain received by each month during the 25 years—and the order in which the months rank as regards that quantity. The principal features of these Tables are :

1st. Out of the 300 months—(25 x 12) very few, only 6 per cent, exceeded 10 inches, viz.,

1	—	14	inches
1	"	13	"
3	"	12	"
6	"	11	"
9	"	10	"
<hr/>			
	20		

2nd. 140, or one half of the remainder, fell short of 4 inches, viz.:

15	under	1	inch
41	"	2	inches
49	"	3	"
35	"	4	"

Total.....140 " 4

3rd. The months which ranked highest and lowest most frequently, exhibiting another form of a preceding statement, are :

		First	Second
<b>Highest</b>	October	11	7
	August	4	5
	November	4	5
	September	4	2
	June	2	3
<b>Lowest</b>	March	10	6
	April	10	3
	February	2	7
	May	2	4
	November	1	—

November is the only month which is found in the two extremes, and that in consequence of an extraordinarily low month in 1849.

45. It will be seen in the last Table of this series, Appendix No. 15, that a slightly smaller number of months, 124, is above the average line drawn from 1 to 12 than below it, viz. 123, but that the opposite angles almost balance one another. July and January are aberrant months as regards excessive Rainfall ; November and December as regards deficient Rainfall.

46. One of the objects of the present compilation is to assist those who are interested in calculating the probability, or expectation, of coming seasons. This can, of course, be done most closely by comparing the year under examination with the average of those years which most resemble it. But without entering into this detail, or in the absence of the information required to make the calculation, an enquirer could take the annual averages of the coming months, which have already been stated. This, however, for such a purpose, may be improved by eliminating the exceptional months, both high and low, and also by showing not only the average, but the ordinary limits of each month, with the exceptional ones; and this calculation has been made in the following Table, in which both the original and the adjusted averages are shown. It will be seen to how small an extent, only 6 per cent, the removal of the exceptional months at both extremes affects the former. The character of the season, or the appearances of the weather may help an observer to form a conjecture whether the coming month will incline toward the higher or the lower limit of the ordinary average—and every planter can, with sufficient data, frame a similar Table for his own Estate, which he will find useful in his field operations. In the Appendices Nos. 16 & 17 are inserted Tables for the Estates of the two gentlemen whose example and encouragement have contributed most to the preparation of the present essay, viz. *Binfield & Halton*, together with a Formula and Example for preparing similar Tables for any Stations, Appendix No. 18.

MONTHS.	Average Rainfall of 25 years, 1847-71.	Average Rainfall after excluding Exceptional Months.			No. of Exceptional Months.		Limits of Exceptional Months.
		No. of Years.	Limits of Rainfall.	Average.	Under aforesaid lowest.	Above aforesaid highest.	
Jany.....	3.26	19	From 1.50 to 4.50	2.93	2	4	2 of 1.14 & 1.19 4 from 4.76 to 6.96
Feby....	2.58	20	1. — 3.50	2.27	1	4	1 of 0.95 4 from 3.88 to 5.78
March....	1.47	16	1. — 2.50	1.45	6	3	6 from 0.31 to 0.88 3 from 2.66 to 3.90
April.....	1.99	16	1. — 4.	1.78	6	3	6 from 0.66 to 0.98 3 from 4.13 to 6.35
May.....	3.54	18	1.50 — 7.	3.36	4	3	4 from 0.56 to 1.33 3 from 7.11 to 9.26
June.....	5.45	19	2. — 9.	4.45	1	5	1 of 1.62 5 from 9.19 to 10.94
July.....	5.70	19	3. — 8.	5.76	3	3	3 from 2.27 to 2.86 3 — 8. — 9.01
August...	7.24	20	5. — 11.	7.21	3	2	3 from 3.21 — 4.65 2 of 11.89 & 12.84
Sept.....	6.24	20	3.50 — 9.	5.65	1	4	1 of 3.34 4 from 9.25 to 10.77
Oct.....	8.69	18	5.50 — 11.	8.28	2	5	2 of 2.89 & 5.12 5 from 11.18 to 13.30
Nov.....	7.08	21	1.50 — 10.	6.67	1	3	1 of 1.42 3 from 10.18 to 14.15
Dec.....	4.50	18	2.50 — 6.	4.42	3	4	3 from 1.40 to 2.36 4 — 6.16 — 7.11
Total...	57.74			54.23			

This Table also shows the comparative liability of each month to exceed the average limits—and the extent of those excesses, circumstances which are of much importance in examining the "Expectation" of individual Stations.

47. The following is a comparison between the Quantity and percentage of each month calculated on the total Rainfall, and on the average after eliminating the extremes:

	Total.	Inches.	Amended.	Difference of latter.
Jany.....	3.26	2.93		— .33
Feb.....	2.58	2.27		— .31
March....	1.47	1.45		— .02
April.....	1.99	1.78		— .21
May.....	3.54	3.36		— .18

	Total.	Inches.	
	Amended.	Difference of latter.	
June.....	5.45	4.45	-1.00
July.....	5.70	5.76	+ .06
Aug.....	7.24	7.21	- .03
Sept.....	6.24	5.65	- .59
Oct.....	8.69	8.28	- .41
Nov.....	7.08	6.67	- .41
Dec.....	4.50	4.42	- .08
Total.....	<u>57.74</u>	<u>54.23</u>	<u>3.51</u>

It will be seen that the difference on the whole year is only 3.51 inches, or 6 per cent—little more than a quarter of an inch monthly; and that it affects no month to any important extent except June. At single stations the difference will probably be greater. At Binfield, for instance, at a high elevation, where heavy rains are most frequent, the difference amounted to 6.02 inches, or 9 per cent, while at Halton it was 4.38 inches, or 6.66 inches.

48. A comparison of the extent to which each month was differently affected at these two stations, situated, as they are, in such different positions—the former among the highest stations in the Island—1100 feet high, and in the northern half of the Island, while the latter is not above 250 feet high, and is in the Southern Lowlands, will be instructive.

Binfield.		Halton.		Variation.	
Total.	Amended.	Total.	Amended.	Binfield.	Halton.
Jany .. ... ..	3.89	3.32	2.86	2.83	- .57
Feby .. ... ..	3.22	2.22	2.34	2.04	-1.00
March.....	1.82	1.72	1.61	1.44	- .10
April.....	2.53	1.89	2.61	1.94	- .64
May.....	4.79	3.53	3.84	3.22	-1.26
June.....	6.16	4.95	5.35	5.10	-1.21
July.....	6.88	7.36	5.36	5.45	+ .98
Aug.....	7.86	7.30	6.82	6.59	- .56
Sept.....	7.36	8.22	5.72	5.63	+ .86
Oct.....	9.46	8.66	8.08	7.60	- .80
Nov.....	8.46	7.06	6.98	6.18	-1.40
Dec.....	5.37	5.09	4.91	4.69	- .26
Total.....	<u>67.34</u>	<u>61.32</u>	<u>56.48</u>	<u>52.71</u>	<u>6.02</u>
					<u>3.77</u>

The difference of total variation is from 6.02 to 3.77 inches at the two stations. But while in the lower one, Halton, the extremes of the monthly variation are from—.80 to +.09, less than an inch, at Binfield they are from—1.40 to +.96, or 2.26 inches—a large excess being apparent in the two months of July and September. The existence of such differences, and the occurrence of such variations is, doubtless, known to a few careful observers; but even to them their exact extent has been hitherto unknown.

49. The Table at Page 14 by applying the experience of the past to the probability of the future, may be read in the following manner, and its value, as applied to individual stations, will be very apparent.

#### January.

The Rainfall will not be less than 1.00 inch	(1.14)
“ “ greater than 7.00 inches	(6.96)
The average probability is 3.00 “	(2.93)
The chances are	
10 to 1 (19 to 2) it will not be less than 1.50 inches.	
5 “ 1 (19 “ 4) “ “ greater than 4.50 “	

#### February.

The Rainfall will not be less than 1.00 inch.	(0.95)
“ “ greater than 6.00 inches	(5.78)
The average probability is 2.25 “	(2.27)
The chances are	
20 to 1 exact it will not be less than 1.00 inch.	
5 “ 1 (20 to 4) “ “ greater than 3.50 inches	

<b>March.</b>	The Rainfall will not be less than 0·33 inch " " greater than 4·00 inches The average probability is 1·50 " The chances are 3 to 1 (16 to 6) it will not be less than 1 inch 5 " 1 (16 " 3) " greater than 2·50 inches	(0·31) (3·90) (1·45)
<b>April.</b>	The Rainfall will not be less than 0·66 inch " " greater than 6·50 inches The average probability is 1·75 " The chances are 3 to 1 (16 to 6) it will not be less than 1 inch 5 " 1 (16 " 3) " greater than 4 inches	(0·66) (6·35) (1·78)
<b>May.</b>	The Rainfall will not be less than 0·50 inch " " greater than 9·25 inches The average probability is 3·25 " The chances are 5 to 1 (18 to 4) it will not be less than 1·50 inches 6 " 1 (18 " 3) " greater than 7 "	(0·56) (9·26) (3·36)
<b>June.</b>	The Rainfall will not be less than 1·66 inches " " greater than 11 " " The average probability is 4·50 " The chances are 19 to 1 exact it will not be less than 2 inches 4 " 1 (19 to 5) " greater than 9 "	(1·62) (10·94) (4·45)
<b>July.</b>	The Rainfall will not be less than 2·25 inches " " greater than 9·00 " The average probability is 5·75 " The chances are 6 to 1 (19 to 3) it will not be less than 3 inches 6 " 1 (19 to 3) " greater than 8 "	(2·27) (9·01) (5·76)
<b>August.</b>	The Rainfall will not be less than 3·25 inches " " greater than 13·00 " The average probability is 7·25 " The chances are 7 to 1 (20 to 3) it will not be less than 5 inches 10 " 1 (20 " 2) " greater than 11 "	(3·21) (12·84) (7·21)
<b>September.</b>	The Rainfall will not be less than 3·33 inches " " greater than 11 " " The average probability is 5·66 " The chances are 20 to 1 exact it will not be less than 3·50 inches 5 " 1 (20 to 4) " greater than 9 "	(3·34) (10·77) (5·65)
<b>October.</b>	The Rainfall will not be less than 2·75 inches " " greater than 13·33 " The average probability is 8·33 " The chances are 9 to 1 (18 to 2) it will not be less than 5·50 inches 4 " 1 (18 " 5) " greater than 11 "	(2·89) (13·30) (8·28)
<b>November.</b>	The Rainfall will not be less than 1·33 inches " " greater than 14·25 " The average probability is 6·66 " The chances are 21 to 1 exact it will not be less than 1·50 inches 7 " 1 (21 to 3) " greater than 10 "	(1·42) (14·15) (6·67)
<b>December.</b>	The Rainfall will not be less than 1·33 inches " " greater than 7·25 " The average probability is 4·50 " The chances are 6 to 1 (18 to 3) it will not be less than 2·50 inches 5 " 1 (18 " 4) " greater than 6 "	(1·40) (7·11) (4·42)

50. Before closing the examination of the Monthly averages it will be interesting to compare those of this Island with those of North America, between which dissimilar countries it is strange to find there is little difference as regards the annual Rainfall, although the distribution over the several months indicates the difference of Latitude, and the tropical character of the Insular rains. These averages, with some others, are given by Professor Pliny Chase in a Paper on the Tidal Rainfall of Philadelphia, published in 1868, and are here inserted:

	Annual Averages:			
	Barbados.	America.	Maritime Europe.	Central Europe & Asia.
January .....	3.26	4.51	2.98	1.36
February.....	2.58	3.39	2.45	1.43
March.....	1.47	3.99	2.36	1.71
April.....	1.99	3.66	2.31	1.65
May.....	3.54	5.23	2.39	2.59
June.....	5.45	5.70	2.53	3.00
July.....	5.70	5.77	2.43	3.45
August.....	7.24	5.05	2.75	3.51
September.....	6.24	5.45	3.09	3.00
October.....	8.69	4.42	3.80	1.99
November.....	7.08	4.70	3.55	1.62
December.....	4.50	4.62	3.01	1.85
Total.....	57.74	56.49	33.65	27.16

#### DAILY RAINFALL.

51. In Appendix No. 19, is furnished the Daily Rainfall at three Stations in different parts of the Island for 25 years from 1847 to 1871. They present a tolerably fair Rain Chart of the whole Island throughout that period, and supply materials for working out, and testing, problems regarding the periodicity and distribution of Rain by those who possess sufficient leisure, and who either maintain, or are in search of, a theory with regard to these and kindred subjects.

52. Many persons expect a change of weather at the change of the moon: others reject the idea. The fact can only be determined by observations extended over long series of years, and taken at different places. Every contribution to these is valuable. Professor Pliny E. Chase, of Philadelphia, U.S., has for some years turned his attention to this subject, and collected important information bearing upon it. In a memoir printed in the Proceedings of the American Philosophical Society in June 1868 the following particulars are given, which are both interesting and suggestive.

53. From daily observations taken at Cobham Lodge in Surrey, (England) for a period extending (with few interruptions) over 40 years, from 1825 to 1864, a marked, though not a great, difference was found in the frequency and amount of Rain not at the changes, but in the several quarters of the Moon—viz:

	Aggregate of Tabular Ratios.	Number of Rainy Days.	
		>01 inch or more.	>25 inches or more.
Week of New Moon.....	687	1490	260
" First Quarter.....	721	1484	268
" Full Moon.....	681	1446	250
" Last Quarter.....	709	1511	272
Two weeks of Syzygy.....	1368	2936	510
Do. Quadrature.....	1430	2995	540

54. A comparison of similar observations for the same 40 years at Philadelphia, U.S., and for 13 years, 1854—1866, at Mussoorie, on the Southern range of the Himalaya Mountains, yields the following results, confirming the observation that Rain falls more frequently in the week of first and last quarters than of New and Full Moon. The ratios exhibit the per centage above or below the mean of 100.

	Ratios of Weekly Rainfall.			Average daily fall at Mussoorie.
	Surrey.	Philadelphia.	Mussoorie.	
Week of New Moon..	98.2	97.6	86.2	402
" First Quarter...	103.1	100.3	114.7	535
" Full Moon.....	97.4	95.8	85.6	399
" Last Quarter...	101.4	106.3	113.5	529

55. In subsequent publications he considers that his deductions, as to the lunar influence on the weather, are confirmed by observations from Lisbon, Canada, San Francisco, and other portions of the United States. He furnishes interesting Tables of the Lunar Hourly

**Rainfall at Philadelphia, and of the Solar hourly Rainfall at that place and at Greenwich;**  
also one of the number and amount of Heavy Rains (1 inch or more) at Philadelphia,  
on different days of the Lunar Months, founded on daily observations taken from 1825  
to 1868, which is of sufficient interest to be inserted here:

Age of Moon.	No. of Days.	Amount in Inches.	Amounts Exceeding			
			1·5 Inches.	2 Inches.	2·5 Inches.	3 Inches.
0	17	20	14	9	7	7
1	14	24	14	4	4	4
2	14	21	6	3	3	0
3	24	24	17	5	3	0
4	29	48	31	16	8	3
5	15	21	15	7	5	0
6	19	28	17	4	0	0
7	21	33	17	12	5	0
8	21	29	21	5	3	0
9	12	29	18	11	11	11
10	17	23	12	5	3	3
11	16	24	13	8	6	3
12	14	23	13	7	3	0
13	20	27	11	8	6	0
14	17	25	11	6	6	3
15	19	33	21	18	14	11
16	18	32	17	9	7	7
17	29	39	23	4	0	0
18	26	52	37	29	20	7
19	21	31	15	8	3	3
20	18	35	21	16	14	12
21	24	38	24	14	3	3
22	21	33	22	15	8	8
23	24	42	19	14	10	10
24	22	36	18	13	9	8
25	16	19	9	2	0	0
26	20	38	25	20	16	13
27	29	42	24	12	3	3
28	21	38	23	11	3	0
29	7	11	6	4	0	0

56. From this the following abstract has been framed, which yields some interesting results, if only as subjects for comparison with similar observations in Barbados and elsewhere:

1st. The largest number of heavy rains fell on the 4th, 17th, and 27th days of the Moon's Age—29 times each. But the average Rainfall, 1·48 inches, was small—not much above the lowest.

2nd. The next in order of frequency was the 18th day, and the rainfall was heavy, 2·00 inches, only surpassed on the 9th.

3rd. The day which gave almost the smallest number of heavy Rains, 12, but the largest amount—2·41 inches—was the 9th.

4th. The near approximation of the average Rainfalls, ranging from 1·33 to 1·63 inches, with only 4 exceptions, is worthy of notice.

No. of Days.	Days of Moon's Age.	Average Rainfall.
7	29	1·57 inches.
12	9	2·41
14	1. 2. 11.	1·62
15	5	1·40
16	11. 25.	1·34
17	0. 10. 14.	1·33
18	16. 20.	1·86
19	6. 15.	1·60
20	13. 26.	1·62
21	7. 8. 19. 22. 28.	1·56
22	24.	1·63
24	8. 21. 23.	1·58
26	18.	2·00
29	4. 17. 27.	1·48

## DAYS AND NIGHTS.

57. The character of the records of Rainfall kept in this Island does not afford the means of observing the frequency, or amount, of Rain falling at different hours of the day. This can only be noted at a well organised Observatory. But the fall by day and by night is distinguished by most observers, and an examination of the records of Binfield Station for 18 years, from 1854 to 1871, has yielded some remarkable results. The details may be studied in Appendix No. 20. The principal features are:

1st. The quantity of Rain that fell by day and by night was nearly equal:

By day.....	33.41 inches
" night.....	32.60 "

but the number of nights on which it fell was one-half greater than that of the days, viz.:

Days	103
Nights	153

and consequently the average Rainfall during the day time was in the inverse proportion, viz.:

By day	.32
" night	.21

2nd. The proportion between the number of Days and Nights varied little in the dry and wet seasons, viz., from December to May, and from June to November, viz.:

	Dry.	Wet.
Days.....	40.5	39.5
Nights.....	59.5	60.5
	<hr/> 100.	<hr/> 100.

But the proportions between the Quantity of Rain falling by day and by night in the two seasons varied to a greater extent:

	From December to May	Days	Inches.	From June to November	Days	Inches.
		9.45			23.96	
		<hr/> Nights	10.82		<hr/> Nights	21.98
						<hr/> Excess of Nights 1.37
						<hr/> Excess of Days 1.98
						Total difference..... 3.35

3rd. The difference of each month in the last mentioned periods, as regards the proportion of quantity, presents a regularity of curve, which though not complete, is remarkable.

Difference in per centage proportion of Quantity.

Excess of Nights.	Excess of Days.
-------------------	-----------------

December.....	2.1	June.....	3.4
Jany.....	11.2	July.....	3.
Feby .....	5.2	August.....	9.
March .....	19.8	September .....	5.
April .....	9.8	October.....	5.8
May.....	2.6	November.....	1.4

4th In March, which is the driest month of the year, one-half more rain fell in the nights than in the days. On the other hand in August, which is nearly the wettest month of the year, one-fifth more rain fell in the days than in the nights.

## DISTRICTS AND PARISHES.

58. Thus far the calculations have applied to the whole of the Island. The next series applies to the natural divisions of it arranged in Districts, as explained in the introduction, and to the parochial divisions. Several Tables in the Appendix illustrate this series.

Appendices Nos. 21 & 22 show the annual average of 57 Stations for different periods of years—and those of 96 stations for the years 1870 and 1871.

Appendix No. 23 shows the monthly average of each of the above 57 stations for the years recorded.

Appendix No 24 shows the annual average of each District and Parish for each of the 3 years 1869 to 1871, and also for the whole period, as far as recorded, from 1847 to 1871.

Appendix No. 25 shows the monthly average of each District and Parish during the same period from 1847 to 1871.

Appendix No 26 shows the Percentage Proportion of Rain which in each District fell in

each month, and in each natural quarterly division of the year, beginning with December, framed upon the preceding Table for the whole period, 1847-71.

59. The following are the principal results to be derived from these Tables:

First—The extremes of the yearly Rainfall in the highest and lowest Districts were 63·09 & 49·12 inches. The difference was 13·97. The order in which the Districts rank, the average Rainfall of each, and the Quantity and Percentage Proportion above and below the average of 57·74, are shown in the following abstract:

	Quantity, Inches.	Compared with average of 57·74 inches.	Percentage Proportion.
	Inches.	Inches.	Percentage Proportion.
	+	—	+
1. Central Highlands.....	63·09 inches.	5·35	8·4
2. Above Cliff.....	62·99	5·25	8·3
3. Leeward Lowlands.....	57·34	·40	·7
4. Central Lowlands.....	56·44	1·30	2·3
5. Southern Lowlands ...	50·68	7·06	13·9
6. Below Cliff.....	49·12	8·62	17·5

It will be seen that the Leeward & Central Lowlands approximate to the average; that the Central Highland and Above Cliff Districts rise moderately above it—and that the Southern Lowlands & Below Cliff District fell more decidedly below it. But it must be observed that in the Central Highland District have been included two or three Stations on the Leeward side of the Island which have reduced the average of the Highland Stations to Windward, whilst, if they had been added to the Leeward Lowlands they would have brought the average of that District above the mean.

60. A comparison of the several Parishes shows some striking differences, and a result, probably unexpected, viz.: that the Rainfall of St. James equals, or rather exceeds by a fraction, that of St. Thomas \*. The 6 above the mean of 57·74 averaged 63·77 inches, & the 8 below it averaged 52·62; Difference 11·15.

#### Yearly Average of each Parish :

St. James.....	70·01	6 averaging 63·77 inches.
St. Thomas (upper) .....	70·	
St. Joseph do. ....	67·54	
St. John do. ....	59·07	
St. Thomas (lower) .....	58·15	
St. Lucy .....	57·99	
St. Peter (upper) .....	57·61	8 averaging 52·62 inches.
St. George do. ....	57·18	
Do. (lower) .....	54·84	
St. Philip .....	53·27	
St. Peter (lower) .....	52·10	
St. Joseph do. ....	49·12	
St. Michael .....	49·01	December January February
Christ Church .....	47·83	

61. From the quarterly Table it appears that, on the average of the whole Island, and for the whole period, (and it is the same, almost to a fraction, after eliminating all extraordinary months)—

18 $\frac{3}{5}$ Cent, or nearly one-fifth falls in the three months	December January February
12 " or nearly one-eighth.....	March
	April
	May
82 " or one-third.....	June
	July
	August
38 " or two-fifths.....	September
	October
	November

The above proportions, however, vary considerably in the several Districts, as will be

\* The parish of St. James receives the largest share of the "leeward Rains," which, during the cessation of the N.E. Trade winds, chiefly in September and October, are brought from the leeward by Electric clouds, which are attracted by the land, and discharge themselves generally on the sea-board districts.

seen in the following:

In the first Quarter, December to February, the average being 18 ♭ Cent:

The Central Highlands—were .....	19·2	above average
“ Lowlands.....	18·9	
Above Cliff.....	18·6	
Southern Lowlands.....	17·1	below average
Below Cliff.....	16·9	
Leeward Lowlands.....	16·6	

In the second Quarter, March to May, the average being 12 ♭ Cent:

The above Cliff were.....	13·5	above average
Below “ .....	12·9	
Southern Lowlands.....	12·7	
Central Highlands.....	11·8	below do.
Leeward Lowlands .....	11·6	
Central do. ....	10·9	

In the third quarter, June to August, the average being 32 ♭ Cent:

The Central Highlands.....	32·6	above average
Southern Lowlands.....	32·3	
Central Lowlands.....	32·1	
Leeward do. ....	32·	average
Above Cliff.....	30·8	
Below “ .....	29·9	

In the fourth Quarter, September to November, the average being 38 ♭ Cent:

The Below Cliff....	40·3	above average
Leeward Lowlands.....	39·8	
Central do. ....	38·1	
Southern do. ....	37·9	below do.
Above Cliff.....	37·1	
Central Highlands.....	36·4	

The great change in the order of the several districts, in the last quarter, is mainly explained by the Note in the preceding page. Others of the changes in the above statement might be explained by the prevalence of certain winds at particular seasons. It is a subject for congratulation that the Meteorological observations taken by Dr. Walcott during the last 20 years are about to be published.

62. A similar Table, showing the order and per centage of the Districts in each month, is of great interest:

(For Table see next page.)

Month.	1st.	2nd.	3rd.	4th.	5th.		6th.
					B.	H.	
Average of Island							
December.....	7.8	Above Cliff	8.2	S. Lowland	8.0	C. Lowland	7.9
January.....	5.7	C. Highland	6.5	C. do.	6.4	Below Cliff	5.7
February.....	4.5	do.	4.9	Above Cliff	4.7	do.	4.7
March.....	2.6	Above Cliff	2.9	C. Lowland	2.7	do.	2.6
April.....	3.4	do.	3.9	S. do.	3.6	do.	3.5
May.....	6.0	Below Cliff	6.8	Above Cliff	6.7	S. Lowland	6.6
June.....	9.5	do.	10.4	C. Highland	9.9	do.	9.6
July.....	9.9	C. Lowland	10.6	I. Lowland	10.	C. Highland	9.9
August.....	12.6	S. Lowland	13.1	do.	12.8	do.	12.8
September....	10.8	I. Lowland	11.6	Below Cliff	11.2	Above Cliff	10.7
October.....	15.	C. do.	15.6	I. Lowland	15.5	S. Lowland	15.1
November....	12.2	Below Cliff	14.4	do.	12.7	do.	12.2
December.....	—	—	—	—	—	—	—
Total.....	100.				100.		100.

The following is another form of the foregoing Table:

**Order of each District in each month :**

	Below Cliff.	Above Cliff.	Central Highland.	Leeward Lowland.	Central Lowland.	Southern Lowland.
December.....	6	1	4	5	3	2
January .....	3	4	1	5	2	6
February.....	3	2	1	6	4	5
March.....	3	1	4	6	2	5
April.....	3	1	4	6	5	2
May.....	1	2	5	4	6	3
June.....	1	4	2	5	6	3
July.....	5	6	3	2	1	4
August.....	6	5	3	2	4	1
September.....	2	3	5	1	6	4
October.....	5	6	4	2	1	3
November.....	1	4	6	2	5	3

### 63. Some general inferences from these Tables are:

1st. During the dry Season—December to June—the Leeward Lowlands receive a smaller proportion of rain than the other Districts, but in the wet months—July to November—during which they receive the largest share of westerly winds, as has already been observed, they rank among the highest.

2nd. The contrary is the case in the District Above Cliff, which ranks high in the dry Season—December to May—and low from June to November.

4th. The unfavorable months for the Central Lowlands are April to June. It has no other period exceeding two months exceptionally good or bad.

5th. The Central Highlands have two unfavorable periods, one of four months, from September to December, the other of three months, from March to May; while July and February, and the three months from June to August are favorable.

6th. The District Below Cliff ranks high during the dry season from January to June, and in September and November. In the other months it ranks among the lowest.

7th. The three months in which each District ranks most favorably and most unfavorably, as regards the Rainfall of the whole Island, are as follow:

3 most favorable.

3 most unfavorable.

<b>Below Cliff</b>	May	June	November	December	August	October
<b>Above Cliff</b>	Dec.	March	April	July	Octr.	August
<b>Central Highland</b>	Jan.	Feb.	June	Novr.	May	Sept.
<b>Leeward Lowland</b>	Sept.	Octr.	Nov.	Feb.	March	April
<b>Central do.</b>	July	Octr.	Jan.	May	June	Sept.
<b>Southern do.</b>	Aug.	Deer.	April	Jan.	Feb.	March

64. The order in which each District derived its percentage proportion of rain, did not vary greatly, but there were a few notable differences, which are distinguished by Italics in the following Table:

Order of Months.	Below Cliff.	Above Cliff.	Central Highland.	Leeward Lowland.	Central Lowland.	Southward Lowland.
1	October	October	October	October	October	October
2	November	November	August	August	August	August
3	September	August	November	November	November	November
4	June	Sept.	Sept.	Sept.	July	Sept.
5	August	July	June	July	Sept.	June
6	July	June	July	June	June	July
7	May	Decr.	Decr.	Decr.	Decr.	Decr.
8	Decr.	May	Jany.	May	Jany.	May
9	Jany.	May	Jany.	Jany.	May	Jany.
10	Feb.					
11	April					
12	March					
			the same throughout.			

Thus October ranks first in all the Districts

August second in four

third " one; Above Cliff  
fifth " one; Below Cliff

**November** first " two; Above & B.

third " the other four:

	September	ranks third in one; Below Cliff
	fourth	" four
	fifth	" one; Central Lowland.
July	" fourth	" one; Do. do.
	fifth	" two
	sixth	" three
June	" fourth	" one; Below Cliff
	fifth	" two
	sixth	" three
May	" seventh	" one; Below Cliff
	" eighth	" two
	" ninth	" three
Decr.	" seventh	" five
	" eighth	" one; Below Cliff
Jany.	" eighth	" two
	" ninth	" four
Feby.	" tenth	" in all
April	" eleventh	" "
March	" twelfth	" "

It will be observed that the Rainfall is more exceptional in the District below Cliff than in any other; May, June, September & November there rank high; August & December rank low. July & September are exceptional in the Central Lowlands, & August & November in the District above Cliff.

#### INFLUENCE OF ELEVATION.

65. The existence of such an influence is generally known and admitted, but the extent of it, and the rate of increment have not hitherto been investigated. In the Monthly Rainfall Notice for August last Abstracts were published, from which the following is reprinted, with some modifications and additions. The following Statement shows the average annual Rainfall in 1870 & 1871, of 83 Stations, being all of which the exact height above the Sea & the Rainfall for these two years are known. The Stations are classed according to their height, without regard to their local position, on a scale rising by 100 feet at a step. The results of two separate years, the first an average wet one, and the other an extremely dry one, with those of the two years thrown together.

	No. of Stations.	Parishes.	Annual Rainfall in Inches		
			1870	1871	Mean.
Under 100 feet .....	6	1 in St. Peter, St. James 1 " St. Michael, St. Philip 2 " Christ Church.	50.54	38.23	44.39
From 100 to 200 ...	19	1 in St. Lucy, St. James; 3 " St. Michael, 2 St. George 10 " St. Philip, 2 Xt. Church.	51.74	38.55	45.14
200 " 300 ...	14	1 in St. Peter, 1 St. James 1 " St. Michael, 1 St. George 5 " St. Philip, 5 Xt. Church.	53.97	41.10	47.53
300 " 400 ...	9	1 " St. John, 3 St. James 2 " St. Michael, 2 St. George 1 " Xt. Chureh.	55.60	41.39	48.49
400 " 500 ...	3	2 in St. Thomas, 1 St. George	58.74	42.75	50.74
500 " 600 ...	6	4 " St. John, 1 St. Thomas 1 " St. George.	64.20	44.03	54.36
600 " 700 ...	6	3 " St. John, 2 St. Thomas 1 " St. James.	68.40	49.91	59.15
700 " 800 ...	8	4 " St. John, 1 St. Thomas, 3 " St. George.	65.02	49.00	57.01
800 " 900 ...	4	1 " St. John, 2 St. Peter, 1 " St. Thomas.	69.85	47.62	58.75
900 " 1000 ...	4	2 " St. Joseph, 2 St. Thomas do. 1 do.	75.15	54.38	64.76
1000 & above...	4	3 " do.	76.04	54.20	65.12

		Increase or Decrease at each height.		
		1870	1871	Mean.
Under 100 feet				
From 100 to 200		+ 1·20	+ .32	+ .75
200 300		" 2·23	" 2·55	" 2·39
300 400		" 1·63	" .29	" .96
400 500		" 3·14	" 1·36	" 2·25
500 600		" 5·46	" 2·18	" 3·82
600 700		" 4·20	" 4·98	" 4·59
700 800		— 3·38	— .91	— 2·14
800 900		+ 4·83	+ 1·38	+ 1·72
900 1000		" 5·30	" 6·76	" 6·03
1000 and upwards		" .89	— .18	" .36
Total difference in 1000 feet,		+ 25·50	+ 15·97	+ 20·73

66. In Appendix No. 27 is a Return of each Station, from which may be ascertained whether any local circumstances so affect any of the 6 Stations between 600 and 700 feet, by raising their average, or of any of the 8 Stations between 700 and 800 feet, by lowering their average, as to break the otherwise continuous rise apparent in the Table, especially in the column showing the average of the two years. This interruption may have arisen from the high averages at the lower height of 3 Stations, Todds, Mangrove Pond, and Sion Hill, which exceed the average of places between 800 and 900 feet, and from the low averages, at the greater height, of three other Stations, Clifton Hall, Pool, and Cottage, which fall short of the average of places between 500 and 600 feet. Doubtless a sufficiently large number of Stations and of years would supply the means of establishing a very accurate average rate of increase in proportion to height. It will not escape notice that the rate of increase at each stage, is generally greater in the wetter year, and that the total difference is very large. This subject calls for further investigation at a future period, when a sufficient number of years can be brought into comparison.

67. By altering the scale, and proceeding by steps of 200 feet each, the interruption above noticed disappears, and the increase becomes still more regular and striking in the wet year, and in the dry one also, with the exception of the same variation as above, but now reduced to a mere fraction.

	1870.	1871.
Under 200 feet .....	51·45	38·47
From 200 to 400 .....	54·61	41·17
400 600 .....	62·38	44·20
600 800 .....	66·47	49·39
800 1000 .....	71·21	49·24
Above 1000 .....	76·04	54·20

#### CHANGES OF SEASONS.

68. This is a question of great importance to the Agriculturist. The following information, which has already been published in the Monthly notices, is here reprinted, for consideration in connection with the fuller details furnished in this Memoir. The first table shows the number of years, as far as completed, in which the Rainfall of each month exceeded, or fell short of, the average of 1847-71. In order to obtain an equal number of years for comparison, the year 1872 has been added up to April—and the year 1847 has been discarded for the remaining eight months.

	Periods of 13 years.			
	1847-59		1860-72	
	Above	Below	Above	Below
January 1847 to 1872.....	5	8	6	3
February " " .....	6	7	4	9
March " " .....	7	6	4	9
April " " .....	6	7	5	8
Periods of 12 years.				
	1848-59		1860-71	
May 1848 to 1871.....	7	5	3	9
June " " .....	6	6	5	7

		1848-59	1860-71
July 1848 to 1871.....		6	6
August " "		5	6
September " "		4	7
October " "		5	5
November " "		7	5
December " "		6	6
Total.....	{ January to June.....	37	39
	{ July to December...	33	39
		35	37

If the number of Stations had been sufficiently large in the earlier years of the period, an examination of the corresponding changes in the several Districts might have served to throw light upon the causes of the above changes, by indicating differences in particular districts, and suggesting to observant and practical agriculturists the causes of these differences.

69. In further elucidation of the question, the following comparison has been added of the first six years with the last six in the second period of the above statement. The comparison is made with the average of the 25 years.

	Six Years, 1860-65		Six Years, 1866-71	
	Above	Below	Above	Below
January .....	2	4	4	2
February .....	2	4	2	4
March .....	2	4	2	4
April .....	4	2	1	5
May .....	2	4	1	5
June .....	3	2	2	4
July .....	3	3	3	3
August .....	4	2	2	4
September .....	3	3	2	4
October .....	4	2	3	3
November .....	3	3	2	4
December .....	4	2	2	4
Total.....	{ January to June 15	21	12	24
	{ July to December 21	15	14	22

70. In the first of the above statements it will be seen that whilst in the first half of the 25 years the number of months from January to June were in nearly equal proportions above and below the average of the whole period, viz. 37 above and 39 below, the proportions had changed, during the latter half of the period, most disadvantageously, viz.: to 27 above, and 49 below. The proportions for the last six months of the year, July to December had changed slightly in favor of the second period.

71. The second table shows that taking the first six and the last six years of the period the change is unfavorable in both half years. From January to July the proportions have changed from 15 @ 21 to 12 @ 24, and from July to December from 21 @ 15, wet months being in excess, to 14 @ 22.

72. These changes have been shown to affect chiefly the four driest months of the year, February to May, and the rapid diminution has been shown in the following abstract:

Rainfall, February to May.		
Average of 10 years, 1847-56.....	12.07 inches	
" 10 " 1863-72.....	8.38 "	
" 3 " 1870-72.....	5.62 "	

In connection with this startling and grave fact, is the peculiarity that since 1857, the Rainfall of these four months has followed regular cycles of four years each—of which the first was wet, and the next three were dry—viz:

Rainfall, February to May.		
Years—1857.....	11.95 inches	7.19 inches
Average 1858-60.....		
1861.....	19.08 "	
Average 1862-64.....		7.30 "
1865 .....	12.60 "	
Average 1866-68.....		8.60 "
1869 .....	10.16 "	
Average 1870-72.....		5.62 "

## RAINFALL OF SEPTEMBER 8—9, 1872.

73. It has appeared sufficiently interesting to put on record here the facts connected with the Rainfall of the night of 8th, and forenoon of 9th September of the present year, which is believed, as far as the available records show, to have been more general throughout the Island, and to have been heavier, than any that has occurred within the same number of hours, scarcely exceeding twenty-four, in any year since 1843. There may have been heavier falls, and in a shorter period, at individual Stations, or within a limited area; But it does not appear that any Rainfall within the period stated has within so few hours given an average of 5·84 inches for the whole Island, exceeded 7 inches in four parishes, and amounted to 10·65 and 11·02 inches at two stations.

74. The following Table shows the average Rainfall in each Parish on the two days, 8th and 9th—of which a very small portion fell in the day of the 8th or the night of the 9th. It also shows the greatest and smallest Rainfall at any Station in the parish, and the quantity of rain which fell in each Parish during the remainder of the month. The Parishes are arranged in the order of their highest Rainfall on those two days. At three Stations the gauge ran over on the night of the 8th:

No. of Parishes.	Rainfall on 8th and 9th.	Highest Station.	Lowest Station.	Remainder of the month.	Total.
Stations.	Inches,	Inches.	Inches.	Inches.	Inches.
St. Joseph, upper ...10	8·25	11·02	7·18	3·55	11·81
St. George, " ...10	8·22	9·36	6·68	4·00	12·22
St. John, " ...18	7·88	10·65	6·12	2·85	10·73
St. George, lower ...13	7·12	8·98	6·16	2·82	9·94
St. Joseph, " ... 8	6·71	8·30	5·04	2·23	8·94
St. Philip, upper ... 1	6·68	—	—	2·14	8·82
St. John, lower ... 4	6·64	7·61	5·71	2·51	9·15
St. Thomas, " ..... 9	6·53	8·12	4·63	4·35	10·88
Do., upper .....11	5·92	7·57	4·79	4·17	10·09
St. Philip, lower ...27	5·70	8·01	4·35	2·43	8·12
St. Michael.....10	5·57	6·51	4·46	2·19	7·76
St. James, lower ... 6	4·76	6·06	3·69	2·95	7·71
Christ Church.....25	4·51	9·22	2·90	2·35	6·86
St. James, upper... 1	4·30	—	—	2·96	7·26
St. Andrew..... 4	3·65	3·95	3·34	1·62	5·27
St. Peter, lower..... 8	3·30	3·89	2·87	1·61	4·91
Do., upper..... 4	2·85	3·22	2·36	1·43	4·28
St. Lucy.....11	2·53	3·29	2·15	1·19	3·72
Average.....*	5·84	7·23	4·53	2·70	8·54

75. The principal features to be remarked in the above statement are:

- 1°. The greater elevation of St. Joseph probably placed it at the top of the list.
- 2°. Taking elevation into account, St. George, upper and lower, was the most favored Parish.
- 3°. The lower part of St. Thomas received half an inch more than the upper part, notwithstanding the greater elevation of the latter.
- 4°. The same is to be remarked regarding St. James, upper and lower, and St. Peter; and the low position in the list of St. Peter upper, notwithstanding its elevation, is note-worthy.
- 5°. The Rainfall appears to have been materially less to the north of a line drawn across the Island from St. Andrew to Speights-town, including St. Andrew, St. Lucy, St. Peter, upper and lower, and part of St. James.
- 6°. In Christ Church, after discarding St. Anns, where 9·22 inches fell, the variation was between 6·09 on the Ridge and 2·90 at Charnock's.
- 7°. St. Thomas, upper and lower, and St. George received the largest Rainfall in the remainder of the month, and St. Lucy the smallest.

76. It further appears that the average of the six Stations showing the greatest Rainfall, which were spread over the Parishes of St. Joseph upper, St. John, and St. George, upper and lower, was 9·71 inches, and the average of the six lowest, all in St. Lucy, was 2·29. The wind during this storm came in gusts, not of long duration, nor of great strength. Their direction was from S. to W., but nearer, and chiefly, the former.

77. An endeavour has been made to furnish a statement of the principal heavy Rainfalls that have occurred during the last 25 years. But as daily records are avail-

able only for 3 Stations, *Binfield*, (from 1853,) *Husbands*, (from 1847,) and *Halton*, (from 1852,) the following Abstract does not profess to be complete. It is believed, however, that it records most, if not all, of the general falls, with several local ones of a heavy character. In some of these, no comparison with other Stations is given : they are marked with an asterisk. In others more general, a small fall elsewhere has been entered, to show that, though the rain has been general, the quantity has not been generally large. Remarks have been added to throw light on individual cases.

In 1848 Oct. 2 to 4	Husbands	5·41 in.	At Haynesfield only 9·01 in whole month.
1850 " 29	" 30 do.	* 6·20	
" Nov. 28	" 29 do.	* 5·32	
1852 Oct. 29	" 30 do.	* 5·68	
1853 May 9	" 11 St. Ann's	* 11·75	
" 9	" 10 Husbands	4·51	
" 9	" 10 Halton	3·36	
Sept. 27	" 28 Husbands	* 6·84	
1854 Nov. 10	" 11 Welchman Hall	7·69	
" 15	ditto.	4·18	
" 9	" 12 Husbands	10·29	Average of month for whole Island 11·19 inches.
" 8	" 13 Halton	7·87	
" 9	" 12 Binfield	8·09	
1855 Aug. 24	" 25 do.	10·36	
"	Husbands	6·04	
24 "	Halton	7·78	Do. do. 12·84 in.
"	Edgecombe	9·25	
1857 Oct. 15	" 18 Sion Hill	* 11·87	
"	Husbands	1·85	
Nov. 9 to 12	Sion Hill	* 6·37	
"	Husbands	2·41	
1859 Nov. 3	" 6 Dukes	9·07	
"	Binfield	6·36	
"	Husbands	4·02	
"	Halton	7·93	
1860 Sept. 2	Husbands	* 5·95	
Oct. 21	" 22 Halton	6·99	
"	Chapel	6·84	
"	Thurban	6·69	
"	Carringtons	5·43	
"	Binfield	4·81	
"	Husbands	1·67	
1862 Oct. 3	" 6 Sion Hill	* 11·57	
"	Carlton	* 11·08	
"	Husbands	* 11·22	
"	Einfield	2·98	
"	Halton	2·26	
1863 Aug. 24	Halton	4·19	
"	Binfield	5·17	
"	Husbands	1·07	
1864 Sept. 28	" 25 Sion Hill	* 5·81	
"	Carlton	* 6·13	
"	Halton	1·75	
1867 June 22	" 25 Mount Wilton	8·90	
"	Highland	8·67	
22 " 26	Binfield	6·82	
22 " 23	Westmereland	5·72	
22 " 25	Husbands	3·70	
22 "	Halton	1·74	
Oct. 6 "	7 Mt. Wilton	4·47	
	Binfield	3·25	
	Pool	5·26	
	Valley	5·02	
	Carringtons	5·73	
	Halton	4·89	
	St. Ann's	8·82	
Oct. 16	Husbands	3·41	
	St. Ann's	2·80	
			Do. do. 12·74 in.

	Halton	3.07	Average of month for whole Island
	Husbands	2.90	12.74 inches.
Oct. 15	Binfield	2.57	
1868 " 26	Halton	* 5.98	
	Binfield	1.93	Do. do. 8.20 in.
	Husbands	.76	
1870 June 25	St. Nicholas Abbey	* 8.31	
	Binfield	5.34	
	Husbands	* 9-	Do. do. 10.15 in.
	Halton	3.15	

78. The following may be taken as a sketch map of the Rainfall of the Island during the month of September, 1872, in which the Rainfall above described occurred. It shows the number of Inches received by each Station in the several Districts of the Island:—

No. of Inches.	Below Cliff.	Above Cliff.	Central Highland.	Leeward Lowland.	Central Lowland.	Southward Lowland.	Total.
From 4 to 5	—	—	2	9	—	—	11
5	6	1	—	6	—	—	9
6	7	2	—	4	—	9	15
7	8	2	—	6	—	7	15
8	9	2	—	1	3	—	18
9	10	3	1	3	4	4	24
10	11	2	6	5	2	8	26
11	12	3	7	5	1	4	27
12	13	1	7	3	—	2	22
13	14	—	4	3	—	2	14
14	15	—	1	2	—	2	5
15	16	—	1	1	—	—	2
16	17	—	1	—	—	—	1
Total of Stations ..16	—	28	27	35	22	52	180

#### INFLUENCE OF RAINFALL ON CROPS. YEARS.

79. The next subject for consideration is the practical application of the information above detailed in examining its influence upon the staple Crop, the Sugar Crop, of the Island. The means of gauging this are accessible. Almost the whole of the Sugar manufactured—probably within two per cent of a good crop, or five per cent of a bad one, is exported. It is generally shipped within the year in which it is manufactured. If otherwise, the Customs have the means of distinguishing the small remnant, and of including it in the crop to which it belongs. These records have been kept systematically for many years,—since 1806—exactly two-thirds of a century. A return of the quantity in each year, 1806—1872, is contained in Appendix No. 28. The Rainfall Returns do not extend beyond 1847. But, fortunately for the object of this enquiry, the absence of earlier Returns is of less consequence, as during the first half of the century various circumstances besides the Rainfall affected the crop of the season, such for example, as the extension of cultivation, the abandonment of root-crops for the food of the slaves and apprentices, which were generally grown up to 1838, improved methods of cultivation or processes of manufacture, and the influence of a fluctuating legislation affecting the Sugar Market, and encouraging or discouraging the employment of capital on the production and manufacture of the article. During the years immediately preceding and following Emancipation the crops were more or less affected by the irregularity of labor.

80. The year 1847 was the first in which the crop recovered from the effects of that measure. The crop averaged in 1837-39, 31,429 Hhds. In 1840, owing to the drought of 1839 and the emancipation, it fell to 13,899 Hhds. From 1841 to 1845 it rose gradually from 17,811 to 24,777 Hhds. In 1846 there was a bad crop; but in 1847 the crop rose to that of 1838, and the average of 1847-49 was 31,650 Hhds. From that time it has gone on increasing, until it has nearly doubled the highest crops before emancipation, and its present dependence upon the Rainfall chiefly may be clearly traced and measured.

81. Before proceeding to this examination it will be interesting to the Proprietors

and Planters of the Island to trace the progress of the production of the Island during the present century. The record commences in 1806:

In the first 10 years, 1806-1815,	the crop never reached	20,000 Hhds.
In the next 12 years, 1816-27,	it only twice exceeded	25,000
" 12 1828-39,	it twice fell short of	25,000
	and it twice exceeded	32,000
" 7 1840-46,	it began with	13,000
	and rose to nearly	25,000
" 5 1847-51,	it rose to	38,000
" 7 1852-58	it began with	48,000
	and rose to	50,000
" 7 1859-65	it never rose to	50,000
	and fell as low as	36,000
" 6 1866-71	it began with	57,000
	but fell as low as	32,000

With reference to the above figures it may be remarked that the size of the Hogsheads has been gradually increasing during this period, so that the increase in the production of Sugar is inadequately represented in the above statement.

82. The averages, with the Maximum and Minimum, of each of these periods are shown in the following Statement:

Periods.	No. of Years.	Average Hhds.	Maximum Years.	Quantities.	Minimum Years.	Quantities Hhds.
1806-15	10	16,389	1814	19,299	1808	13,996
1816-27	12	21,192	1823	28,305	1820	15,616
1828-39	12	27,386	1838	33,216	1832	19,708
1840-46	7	20,832	1845	24,777	1840	13,899
1847-51	5	33,796	1851	38,731	1848	28,169
1852-58	7	43,495	1858	50,783	1853	38,719
1859-65	7	43,252	1861	49,745	1864	36,199
1866-71	6	48,678	1868	58,250	1869	32,150

It will be seen in the above that the 7 years between 1859-65 were more unfavorable, in every respect, than the previous 7 years, 1852-58; and that the lowest crop within the last six years, 1866-71, has fallen considerably below that of any year since 1848, altho' the average has increased by 5,400 Hhds.

83. One other remark has to be made on the Crops before 1847, and it is much to be regretted that no record of the Rainfall of that period exists, that it might be ascertained how far the phenomenon was influenced by it. In every instance a very small crop—the smallest crop of the years taken into account,—was succeeded by a large one, viz.:

- In 1808 a crop of 13,996 Hhds. was succeeded in  
1809 by one of 18,074 "
- In 1813 a crop of 13,584 "
- 1814 by one of 19,299 "
- In 1822 a crop of 13,860 "
- 1823 by one of 28,669 "
- In 1832 a crop of 19,708 "
- 1833 by one of 28,143 "
- In 1846 a crop of 21,996 "
- 1847 by one of 33,703 "

84. Since 1847 short crops have generally resulted from a short Rainfall in the preceding year, but have not so invariably been followed by large crops.

The rather short crop of 1853 was preceded by an average rainfall, and succeeded by a moderately large crop, following a large Rainfall.

The rather short crop of 1857 was preceded by a short rainfall, and succeeded by a large crop, following an abundant Rainfall.

The short crop of 1864 followed a very low Rainfall, and was succeeded by a large crop, and by three others still larger, all following abundant Rainfalls.

The very short crop of 1869 followed a very low rainfall in 1868, but was succeeded by another short crop following a second low rainfall in 1869—which, however, was succeeded by a large crop, following an abundant rainfall in 1870.

Doubtless those whose experience and memory will enable them to go back to years before 1847 will be able to trace similar coincidences between the Rainfall and the Crop in the years above noticed.

85. A calculation has been inserted in the Appendix No. 29, to show the average produce of the Island for various periods, beginning with the 2 years 1870 & 1871, and ending with the 25 years 1847 to 1871. It is remarkable that while the average of the years 1870-71 was 46,588 Hhds., that of the 14 years, 1858-71 was almost the same, 46,116 Hhds., and that the average of the last two years has only exceeded the average of the 25 years by 3,857 Hhds. A note in this Table shows the highest average of any 2, 3, & 4 consecutive years of the whole period—viz.:

Average of 4 years—1855 to 1868—	53,202 Hhds.
3 " 1866 " 55,581 "	
2 " 1867 & " 54,777 "	

86. The Table in Appendix No. 30, which will form the basis of several interesting statements may be here explained. It shows, first, the Rainfall of each of the 25 years from 1847 to 1871, and the extent to which it exceeded or fell short of the average of that period; Secondly the crop of the year, and the crop of the succeeding year, which is more affected by the Rainfall than that of the current year; Thirdly—the extent to which the crops of each year, and of each following year exceeded or fell short of the average; and Fourthly the number of Hhds. of sugar produced in proportion to the number of inches of Rain in the preceding year.

87. An examination of this last column has led to an arbitrary division of the whole period into two sections, for the purpose of establishing an average with which to compare each year. It was found that to compare the years at the beginning of the series, when the crops were under 34,000 Hhds., with those at the close, when they rose to 58,000 Hhds., would yield a fallacious result; while the last column, showing the average produce proportionate to the Rainfall in each year, presented a point at which this produce, which had at first fluctuated greatly, became almost fixed, while both the average and maximum made a material and permanent advance.

88. This point was 1856-57. In the years 1848-57 the proportion to the Rainfall fluctuated between 518 and 772 Hhds., with a single exception in 1852. The average was found to be 642 Hhds. to the inch. The annual crops averaged 38,295 Hhds., which was within a few Hhds. that of the last year of this period.

89. The year 1857 began with a crop of 50,788 Hhds., never before reached—and the average of the 14 years, 1857-71 was 45,036 Hhds. The proportion to the Rainfall began in 1857 with 800 Hhds., ended in 1870 with 809 Hhds., and averaged 800 Hhds. The variances in the first period from the average amounted, upwards and downwards, to 44 per cent; in the second, with the elimination of one year following the heavy rainfall of 1861, they amounted to only 21 per cent. Consequently in this Table the crops of the years 1848-57 have been compared with the average of those years, and the crops of 1858-70 with the average of that period.

90. Looking for a cause for the difference between the two periods, it has been suggested that the introduction of guano, and the increased use of other foreign manures, contributed largely, if not mainly, to the change. Certainly it appears from the Return in Appendix No. 31, which shews the Importation of Guano and other Manures, extracted from the Blue Books, for the year 1851 up to the present time, that the use of the former and the commencement of a more uniform coincidence between the crop and the Rainfall began with the years 1855-57.

91. The first statement to be drawn from the Table in Appendix No. 30, is the order of the years as regards the Rainfall, with its influence upon the crop of the same and following years, as shewn by their proportion to the average:

Years.	Rainfall, Inches.	Crop of same year.		Crop of following year.	
		+	-	+	-
1855	77.31	1		11	
61	73.82	10		2	
67	69.93	14		29	
53	68.84	average		17	
65	68.64	2		27	
50	67.88		9	average	
15 above average of 57.74 inches	48	63.77	27		15
	57	60.90	14	13	
	70	60.17	13	20	
	66	59.68	27	14	
	51	59.40	average	25	
	62	59.27	2	6	
	64	59.19		2	
	52	58.77	25	average	
	60	57.91	5	10	

Years.	Rainfall. Inches.	Crop of same year.		Crop of following year.	
		+	-	+	-
9 below average.	1859	54.22	12	5	
	49	52.77	15	9	
	54	50.88	17	1	
	69	48.52	28	15	
	56	48.49	11	14	
	47	48.10		27	
	58	45.72	13	12	
	68	44.60	29	28	
	63	42.38	6	19	

92. The following inferences may be drawn from the above.

1° The Rainfall influences almost certainly the crop of the following year, but that of the current year only in a slight degree, not traceable in the above Table. This indeed is otherwise evident, because the Rainfall of the first six months is less than one-third of the whole quantity, and the crop is off the ground before the rains which chiefly nourish the young canes commence. In the 15 years which, for the sake of brevity, will henceforward be called wet years, 12 were followed by crops more or less above the average—2 by average crops—and only one by a short crop. In the 9 dry years 8 were followed by short crops: only one was a trifle above the average.

2° Several of the wet years were accompanied by short crops, and several of the dry by good crops. But in almost every case, and in every important case, the excess or deficiency was preceded,—and the consequence is so regular, that it may be here asserted that it was caused,—by a high or low Rainfall in the preceding year. The influence of the several Months will be examined presently.

3° A very heavy Rainfall does not appear to have a corresponding influence upon the crop of the following year, but a very low Rainfall has that influence, as shewn by the two years at each end of the Table,

4° Another striking evidence of the influence of the Rainfall on the following, and not on the current, year is afforded by the following calculation:

The average crop of the 15 wet years was..... 42,413 Hhds.

" 9 dry years—(almost the same) ..... 42,019 "

But the average of the years following the first 15 was..... 46,870 "

and " ..... latter 9 ..... 36,845 "

showing an increase of 10.5 ♪ cent in favor of the first, and a decrease of 12.3 ♪ cent against the latter.

5° The difference between these two proportions is a measure of the relative intensity of the influence of dry and wet seasons upon the following crop. A dry season is likely to injure the crop by one-fifth more than a wet season is likely to benefit it.

93. The next statement is the order of the years as regards the crops, with the percentage excess or deficiency of the Rainfall in the same and the preceding year. This and the following Table perhaps show the facts deduced from the preceding one in even a more striking manner, and they therefore call for no further remark, beyond a notice of the close similarity of the variation of the extreme crops at both ends.

Years.	Per Centage of Crops.		Per Centage of Rainfall compared with average.		
	Above average.	Below average.	In same year.	In preceding year.	
12 years above average.	1868	29	...	24	21
	66	27	4	...	19
	52	25	2	...	3
	71	20	...	28	4
	54	17	...	12	19
	67	14	21	...	4
	58	13	...	22	5
	56	11	...	16	4
	61	10	28	...	average
2 years average.	62	2	3	...	28
	65	2	19	...	2
	55	1	34	...	12
	51	—	3	...	17
	53	—	19	...	2

\* An explanation of this is suggested later in Paragraphs 96 and 97.

Years.	Per Centage of Crops.		Per Centage of Rainfall compared with average.	
	Above average.	Below average.	In same year.	In preceding year.
10 years below average.	1860	5	+ average	- 6
	63	6	... 27	- 3
	50	9	17	... 8
	59	12	... 6	... 22
	70	13	4	... 16
	57	14	5	... 16
	49	15	... 8	10
	64	17	2	... 27
	48	27	10	... 17
	69	28	... 16	... 24

94. The actual excess or deficiency, in inches, of the Rainfall in the years preceding the several years, ranged according to their crop, was as follows:

Years.	Crops of year.		Rainfall of preceding year compared with average.	
	above average.	below average.	Inches above.	Inches below.
1868	29 ♀ Ct.		12.19	
66	27		10.90	
52	25		1.66	
71	20		2.43	
54	17		11.10	
67	14		1.94	
58	13		3.16	
56	11		19.57	
61	10		.17	
62	2		1.66	
65	2		1.45	
55	1			6.86
51	average {		10.14	
53			1.03	
60	5 ♀ Ct.			
63	6		1.53	
50	9			4.97
59	12			12.52
70	13			9.22
57	14			9.25
49	15		6.03	
64	17			15.36
48	27			9.64
69	28			13.14

#### INFLUENCE OF RAINFALL ON CROPS.

##### MONTHS.

95. The influence of the Rainfall in particular months and seasons upon the coming crop is generally felt and admitted, but not known with any certainty. It is believed, writes an experienced agriculturist, that any marked excess of rain during the first six months of the year is injurious both to the crop which is being reaped, and to that which is to follow. The cane-plant during the early stages of its growth is very hardy, and requires but little moisture; the small early shoots are hard and fibrous, and very different from the large succulent shoots which are afterwards produced, and which lengthen into the juicy reed whence the crop is made. In ordinary and favorable years, with light showers during the first six months, the young canes make no marked progress, but the roots are increasing in length and strength, and in the months of July and August the plant begins to sucker, as it is called, and to put out the shoots which form the canes, but these make no great progress in length before the end of August and in September and October, when the rains usually come to their aid at the critical time. They then grow with extreme rapidity, are extremely tender and succulent, and a short spell of dry weather at that time usually does serious mischief. If however the first six months of the year are wet, and the young canes are excited to an abnormal rapidity of growth, they are

iable to be seriously affected by any interval of dry weather in the middle of the year. Moreover rainy weather in the reaping season retards the manufacture, and, especially in the black soils which contain an excess of Iron variously combined, causes a great loss from the rotting of the canes at the roots.

96. An illustration of this is afforded by the Rainfall and crops of 1860 and the two following years. 1860 was a model year : the rain fell at the right time, and in exactly the average quantity, 57.91 inches, of which 12.46 fell during the first six months. The crop of 1861 would undoubtedly have reached 55,000 Hhds., but for the wet reaping season of that year, in which the Rainfall of the first six months was 31.93 inches,—6.35 in April, 8.01 in May, and 8.01 in June. The consequence was that the Crop only reached 49,745 Hhds., and although so much rain fell throughout the year, 73.82 inches, the following crop, of 1862, was only 46,120 Hhds.

97. In the same manner the heavy rainfall of 1855, 77.31 inches, of which 30.68 fell in the first six months, was followed in 1856 by only a moderate crop, 48,077 Hhds., although the reaping season of that year was most favorable. The result however is by no means constant.

98. The influence of the several individual months has been fully exhibited in a series of Tables contained in the Appendix. No. 32 shews the monthly Rainfall in the years yielding the largest and smallest crops, with the averages of those above and below the average crop, from 1847 to 1871.

Appendix No. 33 shews a similar statement for the years preceding the largest and smallest crops.

The four series of mean monthly Rainfalls detailed in the two preceding Appendices are brought out and compared with the average of the whole period in Appendix No. 34. From this it is deduced that

The average Rainfall of 25 years was	57.74 inches.
12 " yielding crops above average	58.18
11 " " below " "	55.15
12 " preceding crops above average	63.88
10 " " below " "	50.69

Appendix No. 35 contains a Table, framed from Nos. 32 and 33, which shows the number of each month in which the Rainfall was above or below the average in years yielding good and bad crops, and in years preceding good and bad crops.

99. From this have been framed the next three Appendices, Nos. 36 to 38, of which the first, No. 36, is of the highest importance and value. It shews the influence of each month, according to its Rainfall, upon the crop of the same year, and upon that of the following year, by the proportion in which wet and dry months have been followed by good or bad crops. It has not been carried out beyond the month of July for the current year 1872, and this is probably two months more than can be useful, as the crop has scarcely even been so late as to be affected by the weather of June and July. The following abstracts of this Appendix show the order in which each month appears to influence, first, the crop of the same year, and next, the crop of the following year.

#### 1. Crop of the same year.

9 to 3	A wet February gives a bad crop.
7 — 3	" January good
7 — 4	" June good
8 — 5	dry January bad
8 — 5	" April good
6 — 4	wet April bad
7 — 5	dry June bad
6 — 5	" February bad
6 — 5	wet July good
8 — 7	dry May good
6 — 6	" July average
4 — 4	wet May average

#### 2. Crop of the following year.

8 to 1	A wet September gives a good crop.
9 — 3	" July "
5 — 2	" May "
7 — 3	" February "
7 — 3	" August bad "
7 — 3	dry July "

2. *Crop of the following year, (continued).*

7 — 3	A dry	December gives a bad crop
9 — 4	" September	" "
7 — 4	wet October	" "
7 — 4	" November	good "
6 — 4	" March	" "
6 — 4	" June	" "
7 — 5	dry February	bad "
7 — 5	" August	" "
7 — 5	wet December	" "
5 — 4	" January	good "
5 — 4	" April	" "
6 — 5	dry October	bad "
6 — 5	" November	" "
7 — 6	" January	good "
7 — 6	" April	" "
8 — 7	" May	bad "
6 — 6	" March	average
6 — 6	" June	"

The proportions of each month, wet and dry, are given, but it is only the first six in the first Table, and perhaps the first ten in the second, that exhibit proportions from which the probability of results agreeing with them may safely be drawn.

100 Appendix No. 37 exhibits the same information as No. 35 in a more detailed form, but omitting the average per centage of the excess or deficiency of crop connected with each month.

Appendix No. 38 shows the three highest and three lowest Rainfalls of each month during the 25 years, 1847—71, with the character of the crop in the same and following years.

101. Before dismissing this series of Tables, it may be pointed out that Appendix No. 35 affords the means of testing the relative extent to which wet or dry months and years affect the degree of the excess or deficiency respectively. As regards months an illustration only can here be cited. The average excess of crop following wet months in April, May and June is only 8  $\frac{1}{2}$  per cent; the average deficiency of crop following the same months was 13, 19 and 12  $\frac{1}{2}$  per cent respectively. As regards years the following abstract confirms a statement already made, that wet years do not augment the crop to the same extent that dry years diminish it. It also shows that wet years followed by a bad crop, and dry years followed by a good crop, both being exceptions to the rule, do not vary in the same manner, but exhibit almost the identical differences above and below the average.

Average annual influence of Rainfall, calculated from total of  
Monthly influences.

	Wet Months.		Dry Months.	
	Crop above average.	Crop below average.	Crop above average.	Crop below average.
In the same year (average of 6 months.)	12·1 $\frac{1}{2}$ Ct.	14·7 $\frac{1}{2}$ Ct.	14·3 $\frac{1}{2}$ Ct.	14·5 $\frac{1}{2}$ Ct.
In the following year (average of 12 months.)	14·	13·2	13·3	14·9

Appendix No. 39 affords the means of examining each month separately in detail. The months are ranked in the order of their Rainfall, commencing with the highest and ending with the lowest, and the characters of the crop of the same year and of the one following are placed opposite to each.

The last Appendix relating to this branch of the subject, No. 40, gives the principal particulars, the history, as it were, of each year, viz.:

1. Total Rainfall of the year, and comparison with average.
2. do. of the preceding year, and ditto.
3. Rainfall of critical months of preceding year, and ditto.
4. do. do. of same year.
5. Crop of year and following year, and comparison with average.
6. Yield of crop, in Hhds., to Rainfall of same two years.

The critical months chosen are those previously shewn to influence the crop most.

## EARLY AND LATE CROPS.

102. It is an interesting question whether the Rainfall influences, in any way, the

ripening and reaping of the Crop. In Appendix No. 41 a statement is furnished of the dates at which the first shipment, and the shipment of the first 1000 Hhds. have been made in each year from 1847 to 1872. These are classified as very early, early, late, and very late. The word average has been added where it more nearly approaches the average. In Appendix No. 42 the years have been placed in the order of the dates of their first shipment, and the per centage of the year's crop, above and below the mean has been added.

From these it results that

In 7 years the shipments have commenced in January						
13 "	"	"	"	February		
5 "	"	"	"	March		

The first and last months are classed as very early and very late.

103. It will be observed that all the very early crops occurred between the years 1847 and 1856; and that 4 out of the 5 very late crops occurred between 1864 and 1872. It is a question that Agricultural experience may help to decide whether this change in the time of commencing shipments, which may be taken to indicate, with tolerable uniformity, the time of commencing the crop, is owing to a change in the processes of agriculture or manufacture, or to that great and remarkable change which has already been noticed in the rainfall of the dry months, February to May.

An examination of Appendix No. 42 shows that out of the 6 earliest crops

2 were above the average						
1 was an average, and						
3 were below the average,						

but that out of the 6 latest crops

5 were below the average						
1 was scarcely above an average						

Early crops therefore are most likely to prove favourable.

104. The commencement of the crop has a close connection with the Rainfall of the preceding year. Out of 7 very early crops, 6 followed wet years,  
5 very late " 4 " dry "

The other years were equally divided in this respect.

105. In Appendix No. 43 the influence of each month upon the time of commencing the crop is shewn by contrasting the results in the years following the 6 wettest and 6 driest instances of each month. Any influence in this respect, during the same year, must be confined to the months of January and February, which alone are included in the Table. The following appear to be the principal results:

A wet January or February is followed in the same year by a late crop. The influence of a dry January is somewhat greater than a dry February.

As regards the following year, it may be doubted how far the Rainfall of the first months in a year can influence the time of commencing the crop in the following year, but the Table presents indications that it does.

The months of February, March, April, or May, if very wet, are likely to be followed by a very early crop, but not a wet January.

The months of February to September, if very dry, are likely to be followed by a very late crop. The chance of a similar result following a very dry January is less.

A heavy Rainfall in June, July, and August does not cause a preponderance towards early or late crops. In September it tends to cause a late crop.

A very wet October or November was followed in 5 out of 6 instances by a late crop, but in the sixth instance by a very early crop. A very dry October conduces to a late crop. A very dry November shows no preponderance.

A very wet December is more frequently followed by an early crop—a very dry December is generally followed by a late crop.

#### METHOD OF CALCULATING THE COMING CROP.

106. It only remains to show how the crop of any year may be measured by the Rainfall of the preceding year, with such an approach to accuracy in all but very exceptional years as to give a practical utility to the formula. The factors may require to be changed from time to time, as circumstances arise to affect either the area of land under Canes, or the forms of cultivation or manufacture. But changes in these are not likely to be frequent or sudden in Barbados, and when they commence, their influence upon the crop will not be very rapid.

107. The formula will be described, and the process by which it was arrived at. Its application will then be shown. In Appendix No. 30, and in the observations made upon it at Page 31, it was shewn that between 1856 and 1869,—a period of 13

years.—there was a yield of crop in each year, proportionate, without any great variation, to 800 Hhds. for each inch of Rain in the preceding year. The exact proportion in 1856 was 800 Hhds., in 1869, 809 Hhds., and on the average of the 14 years, exactly 800 Hhds. The extreme limits of variation, with one exception, following the unusual Rainfall of 1861, were 713 and 877. It was found that the calculation of 800 Hhds. to an inch of Rain compared with the actual yield, gave results varying from the exact quantity by proportions rarely exceeding 7  $\frac{1}{2}$  cent, and in two instances not amounting to 2  $\frac{1}{2}$  cent; that the calculated yield fell short of the actual after wet years, and was in excess of it after dry years; and that by the addition or subtraction of about 7  $\frac{1}{2}$  cent ( $7\frac{1}{2}$  has been adopted in the following Table for the convenience of calculation) the crop might have been calculated within 3000 Hhds., in 9 out of the 13 years. During this period, therefore, 1856 to 1869, the formula for calculating the crop of the current year was by multiplying the total Rainfall of the preceding year by 800, and adding  $7\frac{1}{2}$   $\frac{1}{2}$  cent, if that year was a dry one, or deducting  $7\frac{1}{2}$   $\frac{1}{2}$  cent if it was a wet one.

107. The details of this calculation, and the process by which the amount of error was ascertained, are furnished in the following Table:

Years.	Rainfall in Inches.		Actual Crop of following year.		Crop calculated at 800 Hhds. to the inch.		Difference between Calculated and actual Crop.		Per Percentage of Difference.		Crop calculated at 800 Hhds. to the inch, with $7\frac{1}{2}\%$ cent added or subtracted.		Difference between Calculated and actual Crop.	
	Hhds.	Hhds.	Hhds.	Hhds.	Hhds.	Hhds.	Hhds.	Hhds.	Hhds.	Hhds.	Hhds.	Hhds.	Hhds.	Hhds.
1856	48.49	38,790	38,792			6		Equal			41,701	+ 2,903	+ 7.4	
57	60.90	50,788	54,720			3,932	7.7				50,616	- 172	- 0.3	
58	45.22	39,666	36,176			3,490					37,889	- 1,777	- 4.4	
59	54.22	42,684	43,376			692	1.4				46,628	+ 3,944	+ 9.2	
60	57.91	49,745	46,328			3,417					49,808	- 63	- 0.1	
61	73.82	46,120	59,056			12,636	28.0							
62	59.27	42,281	47,416			4,135	9.7				43,861	+ 1,580	+ 3.6	
63	42.38	36,199	33,904			2,295					36,456	- 257	- 0.7	
64	59.19	46,068	47,352			1,284	2.7				43,801	- 2,267	- 4.9	
65	68.64	57,188	54,912			2,276					59,030	+ 1,842	+ 3.2	
66	59.68	51,304	47,744			3,560					51,324	- 20	Equal	
67	69.93	58,250	55,944			2,306					51,748	- 6,502	- 11.2	
68	44.60	32,150	35,680			3,730	11.6				38,356	+ 62,06	+ 19.3	
69	48.52	39,270	38,816			454					41,726	+ 2,456	+ 6.2	
<b>Average</b>		<b>55.30</b>	<b>44,953</b>	<b>44,240</b>							<b>45,611</b>			

108. The almost identity of the average actual crop, for the whole period, with the average calculated at 800 Hhds., is most remarkable. But individual years do not tally so closely; yet an examination of the columns showing the per centage differences between the calculated and the actual crops, affords the remarkable result that within the limits of 800 Hhds to the Inch of Rain and 860 Hhds. ( $7\frac{1}{2}$  P Cent on 800) there are only three out of fourteen years in which the difference amounts to 5 P Cent, a difference which, in calculating a crop before a Hogshead of Sugar is made, is almost inconceivably small.

	At 800 Hhds.	At 860 Hhds.
1856	Equal	
7		0·3 ™ Ct.
8		4·4
9		9·2
60		0·1
1	+ 28·0	
2		3·6
3		0·7
4	+ 2·7	
5		3·2
6		Equal
7	- 3·9	
8	+ 11·6	
9	- 1·1	

109. It will be observed that this calculation closes at the year 1869. The reason is that the yield of 1870, after an abundant, but not very heavy, Rainfall, was unusually large, 895 Hhds. to the inch, and that the yield of the present year, after the exceptionally low Rainfall of 1871, will probably exceed 940 Hhds. to the inch. It remains to be seen whether this increase is constant, and will require an increase of the multiplying factor. The theory of the calculation and its practical application will not be affected, and may be of service not only to the Planters of Barbados in particular, but to the Agriculturists of other countries who have the means of comparing the relation between the Rainfall and Crops (especially Sugar) for which, it is hoped, this Report will afford some useful materials and suggestions.

110. The principle may possibly be applied to individual Plantations on which a record of the Rainfall has been kept for a sufficient number of years. The yield of each year being known to its proprietor, he can calculate the average quantity to the total area under cultivation, or to the acre, if the area should have been variable, and by the same process, modified by any incidents peculiar to the Estate, arrive at a result, useful for his own information and guidance, similar to that which has been here attempted for the whole Island.

RAWSON W. RAWSON.

Government House, Barbados, }  
19th October, 1872. }

## SUPPLEMENT

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Since the foregoing Report was completed, some additional Tables have been compiled, which yield information of sufficient interest to be added in the form of a Supplement.

### FREQUENCY AND DISTRIBUTION OF RAIN.

111. From Appendix No. 19, which shows the daily Rainfall at the three Stations, *Binfield*, *Husbands*, and *Halton* during the years 1847-72, an abstract, contained in Appendices No. 45 and 46, has been prepared, which shows the number of days on which Rain fell at each of those stations, in each month of that period, and the monthly average of the whole period.

112. To correspond with this, a Table, Appendix No. 47, has been prepared to show the quantity of Rain which fell at each station, in each month of the same period.

113. From these, and from the original Appendix No. 19, a third Table, Appendix No. 48, has been compiled, which exhibits some very interesting results, illustrating the frequency and distribution of Rain in this Island, in a remarkable manner. Of these the principal may be here noticed.

114. The three Stations in question, afford fair instances of Stations in the most opposite portions of the Island. *Binfield*, in St. Joseph, is on the windward side of the Island, nearly midway between its two extremities, about two miles from the coast, and 1,065 feet above the sea. *Husbands* is on the Leeward side of the island, half a mile from the shore, and only two miles from the northern extremity of the island. It is 182 feet above the sea, and about 10 miles to the Northwest of *Binfield*. *Halton* is less than five miles south of *Binfield*, more inland than either of the other stations, being about five miles from the shore, both to the East and South. It is 280 feet above the sea, and lies under the range of hills which extends past Gunhill to Mencrieff—and which varies from 689 feet in height, at the former, to 521 feet at the latter, station. It receives therefore the rains from the South and Southeast, which may not pass beyond that range of hills, and it enjoys the benefit of the attraction, or other influence, experienced by them.

115. Before proceeding to compare these stations, it must be pointed out that the difference in their elevation alone would affect the amount of their Rainfall, as shown at Page 24, to about the following extent in an average year :

Halton might expect above Husbands	5 inches.
Binfield                  "              Halton	22       "
Do.                        "              Husbands	27       "

Other influences have modified these amounts, and on the average of the 18 years from 1854 to 1871,

Halton received less than Husbands	0·77      inches
Binfield                  "              Halton	10·85     "
Do.                        "              Husbands	10·08     "

116. The following results are drawn from Appendix No. 48 :

The number and proportion of days on which Rain fell during the above period of 18 years was as follows :

	No. of Days	Per Centage Proportion
Rain at none of the 3 stations—none :	1,665	24·4
all 3 stations general:	2,150	31·8
Binfield alone solitary:	405	5·9
Husbands        "        "	888	5·8
Halton            "        "	642	9·4
Binfield and Husbands partial	823	4·7
do. and Halton        "        "	710	10·9
Husbands and do        "        "	476	7·1
<b>Total</b>	<b>6,789</b>	<b>100·</b>

Thus, on one fourth of the whole number of days there was no Rain at any of the three Stations :

2° On nearly one third Rain was general at all the three Stations. General Rains.  
3° On about one fifth Rain fell at one or other of the three, and not at the other two : Solitary Rains.

4° On rather more than a fifth, Rain fell at two of the three, in different combinations, and not at the third : Partial Rains.

5° Rain was very much more frequent at Halton alone than at either of the other two stations, which scarcely differed from one another. The three averaged 7 per cent.

6° Rain was twice as frequent on the same day at Binfield and Halton, both situated to windward, east and south, as at Binfield and Husbands, east and west ; and it was one third more frequent on the same day at Halton and Husbands, south and west, than at Binfield and Husbands. The average of the three Stations combined in pairs, was a little above that of the same separately, viz : 7·6 per cent.

6° The facts exhibited in the last two Paragraphs, indicate that showers, if not general, were most frequently spread over the Windward side of the Island ;—next, over the Southward and Leeward ;—and least often, over both sides of the Northern part of the Island.

117. With regard to quantity, Binfield received, on an average, about a fifth more than either of the other stations, which differed from one another by less than an inch, viz :

Binfield.....	66·43 inches
Husbands.....	56·35 "
Halton.....	55·58 "

118. An examination of the differences in the frequency and intensity of the Rain in the several months at the three stations yields very interesting results. The following Table shews the number and proportion of days on which there were general or partial rains, or no rain, in each month of the period : -

Months.	No. of Days on which Rain fell at			Per Centage Proportion		
	All three Stations.	One or two Stations.	None	All three Stations.	One or two Stations.	None Stations.
January .....	200	257	132	34·	43·6	22·4
February .....	156	252	131	29·	46·7	24·3
March .....	79	260	250	13·4	44·1	42·5
April .....	83	254	233	14·5	44·6	40·9
May .....	132	242	215	22·4	41·1	36·5
June .....	203	271	96	35·6	47·6	16·8
July .....	233	266	90	39·6	45·1	15·3
August .....	238	245	75	42·6	44·	13·4
September .....	193	249	98	35·7	46·1	18·2
October .....	236	224	98	42·3	40·1	17·6
November .....	207	224	109	38·3	41·5	20·2
December .....	190	230	138	34·	41·3	24·7
Total... 2150	2974	1665	31·8	43·8	24·4	

119. From the above and from Appx. No. 49, the following results may be gathered :

1° General Rains prevailed chiefly in the following months, in the order indicated by the per centage attached to each :

August.....	42·6	} varying slightly.
October.....	42·3	
July.....	39·6	
November.....	38·3	

2° Partial rains—that is, Rains falling at one or two of the three stations, were most frequent in the following order :

June.....	47·6
February .....	46·7
September.....	46·1

3° The months in which no rain fell at either of the three Stations were chiefly

March	42·5 per cent
April	40·9
May	36·5

and there was a broad line between these and the preceding and following months. The

break was most sudden between February and March. From the latter month there was a gradual diminution of the drought until June, when the Rains set in, with the maximum of partial Rains in that month, and with the proportion of general Rains increasing to their maximum in August.

4° It is worthy of remark how very even is the monthly proportion throughout the year on which Rain fell at one or two of the three Stations. While the range of general Rains was between 42·6 in August, and 13·4 in March, and the range of no Rain was between 42·5 in March and 13·4 in August,—the (almost) identity of the opposition in the two months being remarkable,—the range of partial Rains was only between 47·6 in June, and 40·1 in October.

120. The several Stations, examined separately, indicate some peculiarities worthy of notice.

1° The months in which Rain fell at "Binfield" alone, were chiefly April, January, and May; at "Husbands," March, April and May; and at "Halton" the same three and July.

2° The months in which Rain fell at "Binfield" and "Husbands" on the same day were chiefly September, January, and July; at "Husbands" and "Halton" from June to August; while at "Binfield" and "Halton" there was little variation between the months, the preponderance being in February, December, and September.

121. The differences in the quantities which fell at the three Stations are equally instructive. The following Table shows the percentage proportions of Rain, which fell in each month; 1°, throughout the Island on the average of the years 1847-71; 2°, on the mean of the three Stations; and 3°, at each Station separately:—

Months	Average of Island 1847-71	Mean of the 3 Stations	Separate Stations.		
			Binfield	Husbands	Halton
January.....	5·7	5·2	5·6	4·7	5·3
February.....	4·5	4·4	4·8	4·	4·3
March.....	2·5	2·4	2·7	1·9	2·7
April.....	3·4	3·6	3·8	3·2	3·7
May.....	6·1	5·7	5·6	5·7	5·8
June.....	9·4	9·3	9·5	9·1	9·3
July.....	9·9	9·8	9·9	10·2	9·2
August.....	12·5	12·7	12·	13·3	12·9
September.....	10·8	11·5	11·7	11·9	10·8
October.....	15·1	15·2	14·3	15·8	15·6
November.....	12·3	12·4	12·1	13·	12·1
December.....	7·8	7·8	7·9	7·2	8·3
Total.....	100	100	100	100	100

122. From this Table the following results may be drawn.—

1° The average of these three Stations for the 19 years differs but slightly from the average of the whole Island for the 25 years, 1847-71, the difference exceeding in no month 0·7 per cent.

2° The largest differences are in January and September, which appear to be caused by the low average at "Husbands" in January, and the high average at the same place in September.

3° All the three Stations appear to have a low average in May, below that of the whole Island.

4° Comparing the three Stations with one another, "Husbands" is immediately below either of the other two Stations throughout the five months from December to April; "Halton" preponderating in December, and "Binfield" in January and February. In May "Husbands" rises to an equality with the other two Stations, standing between them. In June "Binfield" is somewhat higher than the others. In July "Husbands" assumes a preponderance, which it maintains until the end of November. "Binfield" is above "Halton" in July and September, and "Halton" above "Binfield" in August and October. It must be borne in mind that the above proportions do not relate to an excess of quantity at one Station above another, but to the monthly proportion of the whole Rainfall at each place. These however may be seen, and will be found to correspond, in Appendix No. 49.

123. It only remains to observe how much more valuable information might have been added, if there had been a record of the wind and other meteorological phenomena during the above period. It is very much to be desired that the Legislature should provide for the future observation and registration of these; and it is hoped that the information derived from the records of the Pluviometer alone, and discussed in the preceding pages, will be of sufficient value to induce the Legislature to make provision for such more extended observations, and for the continuance and extension of their examination by a competent, responsible, and permanent officer.

RAWSON W. RAWSON.

29th July, 1873.

## SECOND SUPPLEMENT.

A further delay in the printing of the voluminous Tables contained in the Appendix, and the completion of a fourth year since the commencement of the Monthly Notices of Rainfall in Barbados, furnish an opportunity of preparing certain statements of much interest to the Proprietors of this Island, and to science generally, of which I avail myself. The first of these is the average annual Rainfall of all Stations from which Returns have been received for at least three years, and the per centage of that average above, or below, the average of the whole Island in the same years; from which Proprietors will be able to judge approximately, in comparing their Rainfall with that of the Island, whether they have received more, or less, than their usual proportion.

2. With the view of showing another important element, the Stations have been arranged according to their height above the sea, so as to exhibit, first, the proofs of the constant and progressive effect of elevation, and secondly, the variations observable on certain Estates, which must be ascribed to local circumstances.

3. The term of three years, 1871—73, has been chosen, because it is the longest for which a sufficient number of complete annual Returns have been received, viz, 125. But a similar calculation has been made for four years, because a considerable number of Returns, viz, 83, exist for that period—and as all the three years 1871—73 were dry, while the fourth, 1870, was wet, being somewhat above the average, there is a probability of the average of the longer period approaching closer to the general average, than that of the three years; while a comparison of the two averages, by showing the close uniformity of their proportions to the two different Standards, proves that the results are not accidental, but are the consequence of a constant natural law.

4. The average of the whole Island in the three years 1871—73, viz.:

1871—41·46 inches  
1872—48·39      "  
1873—51·26      "

was 47·04 inches, which is 10·70 inches, or 18·5 P cent, below the mean of the 25 years 1847—71, which was 57·74 inches. The Average of 1870 was 60·17 inches, or 2·43 inches above the mean. The average of the four years was 50·32 inches.

5. In the Tables at the end of this Supplement the Island has been divided into four Districts, for the purpose of best showing the effects of elevation. The first comprises Scotland & St. John; the second St. Lucy, St. Peter, St. James, St. Thomas & Upper St. George; the third St. Michael, & Lower St. George; & the fourth Christ Church & St. Philip. The geographical features of the last two Districts are so nearly alike, that they might even be thrown into one. In the other two they vary considerably, and consequently the regularity of increase caused by elevation is interrupted, as will be hereafter shewn.

6. For the convenience of examination, and in proof of the uniform influence of Elevation, the means of Stations at each stage of Elevation in the several Districts, and the per centage of the same above, or below, the average of the Island, have been taken from the above Tables, and stated below:

District 1, comprising St. Andrew, St. Joseph & St. John

Mean of Stations at each Stage of Elevation.			Per Centage above or below Average of Island.
--	--	--	---

	3 Years.	4 Years.	3 Years.	4 Years.
Below 100 feet	41·98	47·15	—10·7	—6·5
From 300 to 400	43·24	40·85	" 8·1	" 18·8
400 " 500	45·24	47·80	" 4·	" 5·
500 " 600	49·61	52·56	+ 5·4	+ 4·4
600 " 700	52·13	57·75	" 10·8	" 14·7
700 " 800	51·37	56·72	" 9·1	" 12·7
800 " 900	59·07	56·23	" 25·5	" 11·7
900 " 1000	58·07	67·82	" 23·4	" 34·7
1000 & above	67·21	68·45	" 42·8	" 36·

7. It will be observed in the detailed Table, marked A., that in this District the following Stations record a Rainfall inconsistent with their elevation, viz.: "Newcastle," "Turner Hall," "Bissex Hill," "District F," and "Colleton," all much below, and "Haynesfield" much above, the average of their stage. The first four are below Cliff. Other Stations in St. John also rank low: "Haynesfield," alone of its stage, ranks with the highest in the District.

8. The above District comprises an area subject almost to the same influences of aspect and wind—the former being eastward, the latter the easterly Trades, and the district being too distant from the western coast to be much affected by Rains brought up by winds from the W. & N.W. The next District, No. 2, differs in these respects. The Parish of St. Lucy, which has a low elevation, is exposed to the wind from East, round by North, to West. St. Peter and St. James rise from the shore on the western side of the Island, to a height of 800 feet, and catch the wind and accompanying heavy showers from W. to N.W. Upper St. George and St. Thomas rise above and behind these, extending to Upper St. John & St. Joseph; so that while they catch the edge of the westerly Rains, they also share in those coming from the East. These important differences have a marked influence upon individual Stations, and Stages, in this District, and destroy the regularity of the progressive increase at each Stage. But they do not compromise the evidence of that increase.

**District 2, comprising St. Lucy, St. Peter, St. James, St. George (upper),  
and St. Thomas.**

<b>Mean of Stations at each Stage of Elevation.</b>				<b>Per Centage above or below Average of Island.</b>			
	<b>3 Years.</b>	<b>4 Years.</b>		<b>3 Years.</b>	<b>4 Years.</b>		
Below 100 feet	41.89	45.78		— 10.9	— 9.		
From 100 to 200-	51.72	57.94	—	+ 9.9	+ 15.1		
200 " 300	42.27	46.91	—	10.1	— 6.7		
300 " 400	44.94	49.71	"	4.4	" 1.4		
400 " 500	44.31	49.30	"	5.8	" 2.		
500 " 600	55.15	57.29	+	17.2	+ 13.9		
600 " 700	55.38	60.30	"	17.7	" 19.8		
700 " 800	57.48	62.06	"	22.1	" 23.3		
800 " 900	48.60	58.16	"	3.3	" 5.6		
900 " 1000	61.22	64.72	"	30.	" 28.6		
1000 & above	62.43	72.00	"	37.9	" 43:		

9. In Table A it will be seen how low the whole of St. Lucy ranged in these years, viz.: from 37.08 inches at a height of 71 feet to 38.86 inches at a height of 404 feet, the average of one Station, "Collyns," at a height of 340 feet, being only 33.76 inches. This however is not the normal Rainfall of the district. St. Peter & St. James exhibit marked departures from the rule. In the former, 2 Stations under 70 feet in height, ("Gibbs" & "District E.") averaged 44.30, while 2 at a height of 220 feet, "Nicholas Abbey" and "Welch Town," averaged only 42.87 inches. In the latter, "Carlton," at a height of 130 feet, had a Rainfall of 61.03 inches, which is the average of Stations 900 feet high, while "Sion Hill," at a height of 618 feet, had only 55.60 inches. The above exceptional cases, which may be ascribed to the lower Stations catching the westerly rains, which do not extend far inland, have disturbed the progressive increase in this District. If they were eliminated, it would be as nearly uniform as in the others.

10. The third District, comprising St. Michael, and St. George Lower, differs from either of the others in not rising above 416 feet, having a westerly aspect, and sharing in the heavy showers which occasionally come from the S. to S.W. The fourth District, comprising St. Philip and Christ Church, has even a lower elevation, 307 feet, with a larger share of the S. to S.W. Rains, while St. Philip enjoys those from the E. to S.E. also. The averages of the two approximate so closely that they may be advantageously exhibited together.

District 3 comprising St. Michael and St. George, (Lower).

" 4 " St. Philip and Christ Church.

Mean of Stations at each Stage of Elevation. Per Centage above or below Average of Island.

	3 Years.	4 Years.	3 Years.	4 Years.
Below 100 feet	District 3—44·32 (one Station)	45·80	— 5·7	— 7·
	4 38·71	42·10	" 17·7	" 16·3
From 100 to 200	3 42·82	42·74	" 6·8	" 15·
	4 42·43	44·45	" 9·8	" 11·6
" 200 to 300	3 44·95	44·61	" 6·3	" 11·3
	4 44·22	47·	" 6·	" 6·6
" 300 to 400	3 46·13	49·05	" 1·9	" 2·5
	4 42·47	45·30	" 9·7	" 10·
416 feet	(one Station)		+ 6·9	+ 3·4
	3 50·30	52·04		
(one Station)				

10. In the above abstract the averages of the 3rd District in the 4 years for stations in two stages from 100 to 300 are affected by a reduction in the number of Stations in the longer average—and no certain inference can be drawn from the return of a single Station at either end of the scale. The uniformity of the other results is very striking. If the two Districts were thrown together, the following would be the averages:

	3 Years.	4 Years.
Below 100 feet.....	40·11	43·02
From 100 to 200 feet.....	42·53	44·02
" 200 " 300 .....	44·42	46·49
" 300 " 400 .....	44·91	47·17
416 feet .....	50·30	52·04

11. It only remains to show how the results of the aggregate of the four Districts confirm those drawn from the separate Districts, and it will be seen how the exceptional Stations noticed above disturb the otherwise regular progression of the increase according to elevation, and how by their elimination in only two steps of the scale, marked with an asterisk, the disturbance disappears altogether in the triennial average.

	Mean of Stations at each Stage of Elevation.	Per Centage above or below average of Island.
	No. of Stations.	No. of Stations.
Below 100 feet.....	8	41·72
From 100 to 200 feet...	25	45·66
Ditto corrected.....	*22	42·54
200 — 300 .....	21	43·81
300 — 400 .....	11	44·19
400 — 500 .....	7	46·62
500 — 600 .....	7	52·38
600 — 700 .....	8	53·75
700 — 800 .....	12	54·42
800 — 900 .....	5	53·83
Ditto corrected.....	*1	59·07
900 — 1,000 .....	6	59·64
1,000 and above ...	3	64·82
Total of Stations	113	78

Average of Island 47·04 50·32

12. I have no doubt that many Planters of Barbados who examine this Report will consider this Supplement among the most interesting and valuable part of the work. I shall be glad if I shall have supplied them with an additional reason for urging the Legislature to maintain and continue the work in the hands of a responsible Officer.

RAWSON W. RAWSON.

GOVERNMENT HOUSE, 2nd April, 1874.

## ANNEX A, TO SUPPLEMENT NO. 2.

*Statement of the average annual Rainfall of each Station in Barbados, from which complete Returns for the whole periods have been received, classed in four Districts, and commencing with the lowest amount in each, for the Three years 1871-73, and for the Four years 1870-73.*

*Note.—(The figure attached to the name of each Station indicates the Parish, as numbered in the first column, in which it is situate.)*

Districts and Parishes,	Stations,	Elevation in Feet.	Average of each Station.		Percentage above or below average of Island.		Mean of Stations at each stage of Elevation.		Percentage above or below average of Island.	
			Of 3 years 1871-3.	Of 4 years 1870-3.	Inches.	Inches.	3 years.	4 years.	3 years.	4 years.
<u>Average of the whole Island.</u>										
District 1,	1 Greenland	93	41.98	47.15	—10.7	— 6.5	41.98	47.15	—10.7	— 6.5
1 St. Andrew	3 Bath	300	46.55	...	" 1.	" 3.2	43.24	40.85	" 8.1	" 18.8
2 St. Joseph	3 Codrington College	327	45.51	...	" 19.9	" 18.8				
3 St. John	3 Newcastle	338	37.65	40.85						
2 Joes River	424	47.17	...	+	.3	" 5.	45.24	47.80	" 4.	" 5.
2 Mt. Daeress	489	43.32	47.80	—	7.9					
3 Cliff	534	50.81	54.22	+	.8	+ 7.7				
3 Guinea	538	46.78	50.89	—	.6	" 1.1				
3 Kendal	544	52.22	...	+	11.		49.01	52.56	+ 5.4	+ 4.4
3 Henley	553	52.41	55.87	+	11.2	" 11.				
3 Stewarts Hill	580	45.84	49.06	—	2.5	— 2.5				
3 Ashford	606	52.42	55.73	+	11.4	+ 10.7				
3 Todds	641	58.94	61.81	+	25.3	" 22.8				
3 Risque	660	53.44	55.71	+	13.6	" 10.7				
1 Turner Hall	697	48.72	...	—	7.	...				
3 Clifton Hall	702	47.87	51.22	+	1.7	" 1.7				
3 Haynesfield	707	65.25	66.11	+	38.7	" 31.3				
3 Pool	710	50.	53.27	+	6.3	" 5.8				
2 Bissix Hill	723	45.66	...	—	2.9					
3 Metherell	749	54.38	...	+	15.6					
3 Sherborne	749	63.57	66.30	+	13.8	" 11.8				
3 Colleton	767	42.96	...	—	8.6					

District and Parishes.	Stations.	Elevation in Feet.	Average of each Station.		Percentage above or below average of Island.		Mean of Stations at each stage of Elevation.		Percentage above or below average of Island.	
			Of 3 years 1871-3.	Of 4 years 1870-3.	3 years.	4 years.	3 years.	4 years.	3 years.	4 years.
3 Edgecliff 2 Retreat		829 874	52.11 66.04	56.23 " 40.4	+ 10.8 " 11.7	" 14. " 37.4	59.07 " 33.9	56.23 " 58.07	+ 25.5 " 67.82	+ 11.7 " 23.4
2 Malvern 2 Blackman's Yard 2 do. House 2 District F.		900 910 960 988	53.66 64.64 65.09 48.02	68.24 " 67.40 " 38.4 " 2.1	" 85.6 " 37.4 " 38.4	" 34.7				
2 Little Island 2 Spa 3 Hill View		1070	67.21	68.45	" 42.8 " 36.	" 36. " 42.8	67.21 " 68.45	68.45 " 42.8	" 36. " 42.8	" 36. " 42.8
<b>District 4.</b>										
1 St. Lucy 2 St. Peter 2 District E 3 St. James 1 Hope		50 69 43.68 71	44.92 45.78 " 21.1	45.78 " 7.1 " 21.1	- 4.5 " 9. " 21.1		41.89 45.78	45.78 " 10.9	- 10.9 " 9.	- 9.
4 St. George upper 5 St. Thomas 2 Six Mens 1 Husband		120 150 184	61.03 50.98 43.16	66.06 " 8.4 49.22	+ 20.7 " 8.2 " 2.2	+ 32.4 " 8.2 " 2.2	51.72 " 57.94	57.94 " 9.9	+ 9.9 " 15.1	
2 Maynard 1 Trefts 3 Holders		200 216 250	41.01 41.61 44.19	46.83 " 11.5 " 6.	" 12.8 " 11.5 " 6.	" 6.9 " 6.6	42.27 " 46.91	46.91 " 10.1	- 10.1 " 6.7	
3 Westmoreland 1 Lamberts 2 Allenheads 2 Warleigh 5 Cane Garden		332 340 353 380 390	50. 33.76 46.34 46.51 48.08	54.09 40.09 51.96 52.69 " 2.2	+ 6.8 " 28.2 " 1.5 " 1.1 " 2.2	+ 7.4 " 20.3 " 3.2 " 4.7				

Districts and Parishes.	Stations.	Elevation in Feet.	Average of each Station. Of 3 years 1871-3.	Percentage above or below average of Island. 3 years.	Mean of Stations at each Stage of Elevation. 3 years.	Percentage above or below average of Island. 4 years.	Mean of Stations at each Stage of Elevation. 3 years.	Percentage above or below average of Island. 4 years.
<b>District 2.—</b>								
<b>Continued.</b>								
1 Collyns	404	38.86						
2 Baker	450	43.22						
5 Edgehill	453	44.95	47.82	" 8.1	" 4.4	" 5.	44.31	49.30
5 Rugby	467	50.21	50.79	+ 6.7	" .9			
5 Hopewell	534	54.87	57.29	" 15.5	+ 13.8		55.15	57.29
4 Green	568	55.94		" 18.9				
5 Mangrove Pond	615	55.65	59.17	" 18.3	" 17.5			
3 Sion Hill	618	55.60	60.46	" 18.2	" 20.1			
5 Walks Spring	670	59.39	61.28	" 26.2	" 21.7		55.38	60.30
4 Hope	686	50.88		" 8.1				
4 Lemon Arbour	720	58.51	61.71	" 24.4	" 22.6			
4 Cottage	720	58.79	55.11	" 14.3	" 9.5			
5 Fisher Pond	725	62.04	62.01	" 31.8	" 23.2		57.48	62.06
5 Olive Branch	740	53.98		" 14.7				
5 Redland	758	59.10	69.40	" 25.6	" 37.9			
5 Dukes	817	60.07	63.99	" 27.7	" 27.1			
2 Nicholas Abbey	824	43.17	48.68	" 8.2	" 3.2		48.60	53.16
2 Welch Town	836	42.57	46.82	" 9.5	" 7.			
5 Farmers	903	60.91						
5 Welshman Hall	905	61.52	64.72	+ 29.4	" 30.8		61.22	64.72
5 Highland	1002	67.76	72.	" 44.	" 43.2			
5 Bloomsbury	1035	57.10		" 21.4			62.43	72.00

Districts and Parishes.	Stations.	Elevation in Feet.	Average of each Station. Of 3 years 1871-3.	Percentage above or below average of Island, average of each stage of Elevation.	Mean of Stations at each stage of Elevation.		Percentage above or below average of Island.	
					3 years.	4 years.	3 years.	4 years.
	3 Apes Hill 1 Lowland 1 Spring Hall 1 Bright Hall 3 Lascelles 5 Ridgeway		59.53 87.30 35.50 97.90 50.30 53.42	41.87 41.40 43.01 50.63 56.20				
District 3.	2 Fairfield	70	44.32	45.80	- 5.7	- 7.	44.32	45.80
1 St. Michael	1 Bushhall	110	36.45	37.74	" 22.5	" 25.		
2 St. George	1 Pine Lower	142	38.56	40.06	" 18.	" 20.		
	2 Valley	162	49.63	50.57	+ 5.5	+ .5	42.82	42.74
	2 Windsor	174	45.81		- 2.6			
	2 Bulkeley	185	42.87		" 8.8			
	2 Constant	194	43.62	42.59	" 7.2	- 15.3		
	1 Sherborne	210	45.12	45.74	- 4.2	" 9.1		
	1 Mt. Clapham	216	37.03	38.10	" 21.8	" 24.2		
	2 Buttal	241	48.79	49.99	+ 3.7	" .6	44.95	44.61
	2 French	281	48.83		" 3.6			
	1 Warren	293	45.02		- 4.3			
	2 Egerton	337	50.11	49.05	+ 6.5	" 2.5	46.13	49.05
	2 Hawon	347	42.16		-10.4			
	2 Endeavor	416	50.80	52.04	+ 7.	+ 3.4	50.30	52.04
	1 St. Leonards		not known	37.20				
	1 Bay		34.04					

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Districts and Parishes.	Station:	Elevation in Feet.	Average of each Station. Of 3 years 1871-3.	Percentage above or below average of Island, years.	Mean of Stations at each stage of Elevation.		Percentage above or below average of Island, years.
					3	4	
					3 years.	4 years.	
1 Edgecombe	207	51.42	52.01	+ 3.3			
1 Dodds	210	48.76	52.10	" 3.5			
2 Lowthers	220	44.45	45.27	- 5.5			
1 Chapel	228	47.96	51.41	+ 1.9	" 2.		
2 Fairy Valley	232	38.84		- 17.4			
2 Charnock's	263	40.56	40.89	" 13.7	- 18.7		
1 Halton	264	49.27	51.88	+ 4.7	+ 3.1	- 14.22	
2 Pilgrim	268	41.05	44.64	- 12.5	- 11.3		
2 Ball's	270	41.21	42.69	" 12.4	" 15.1		
2 Lowland	278	42.20		" 10.1			
2 Scarles	283	40.79	42.40	" 13.2	" 15.7		
1 Oughtersome	291	46.12	49.11	" 1.9	" 2.4		
1 Palmers	294	42.21	44.60	" 12.4	" 11.3		
2 Bannatyne	307	42.47	45.30	" 9.7	" 10.	- 42.47	
2 Distins	not known	38.03				45.80	" 9.7
2 Wotton		40.42					" 10.

## ANNEX B, TO SUPPLEMENT NO. 2.

*Abstract of preceding Table.*

Elevation in Feet.	Districts.	Average of Stations in each District.				Mean of Stations at each stage of Elevation.			
		No. of Stations.	3 years 1871-3	No. of Stations.	4 years. 1870-3	No. of Stations.	3 years.	No. of Stations.	4 years.
Up to 100	1	1	41.98	1	47.15				
	2	3	41.89	1	45.78				
	3	1	44.32	1	45.80				
	4	3	38.71	3	42.10				
100 to 200	2	3	51.72	2	57.94	8	41.72	6	45.21
	3	6	42.82	4	42.74				
	4	16	42.43	12	44.45				
200 to 300	2	3	42.27	2	46.91	25	45.66	18	45.38
	3	5	41.95	3	44.67				
	4	13	44.22	11	47.01				
300 to 400	1	3	43.24	1	40.85	21	43.81	16	46.17
	2	5	44.94	3	49.71				
	3	2	46.13	1	49.05				
	4	1	42.47	1	45.30				
400 to 500	1	2	45.24	1	47.80	11	44.19	6	46.23
	2	4	44.31	2	49.30				
	3	1	50.30	1	52.04				
500 to 600	1	5	49.61	4	52.56	7	46.62	4	49.71
	2	2	55.15	1	57.29				
600 to 700	1	4	52.13	3	57.75	7	52.38	5	54.92
	2	4	55.38	3	60.30				
700 to 800	1	7	51.87	4	56.72	8	53.75	6	59.02
	2	5	57.48	4	62.06				
800 to 900	1	2	59.07	1	56.23	12	54.42	8	59.39
	2	3	48.60	3	53.16				
900 to 1000	1	4	58.07	2	67.82	5	53.83	4	54.69
	2	2	61.22	1	64.72				
1000 & above	1	1	67.21	1	68.45	6	59.64	3	66.27
	2	2	62.43	1	72.00				
		Total No. of Stations				118	47.04		50.32
		Average of Island					78		

## APPENDICES TO REPORT.

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NOTE.—Since these Tables were compiled, and the Report founded upon them was completed, another year has expired, the results of which have been added to several of the Tables, but it has not been found practicable to recast the whole, and to include the results of that year, 1872, in this Report.

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## APPENDIX No. 1.

*Average Yearly Rainfall of Barbados, 1843 to 1872.*

YEARS.	Yearly Rainfall at Fairfield, St. Philip.	Average of Island calcu- lated on Rainfall at Fairfield.	Yearly Rainfall of Island calculated on average of all Stations recorded.	Average of Four Stations, viz. : <i>Husbands,</i> <i>Grand View,</i> <i>Halton,</i> <i>Binfield.</i>		Average of Twelve Stations. 6 North : 6 South :
				No. of Stations.	Inches.	
1843	Inches. 45.91	Inches. 47.57	...	...	...	Inches.
1844	74.75	78.48	...	...	...	...
1845	43.91	46.13	...	...	...	...
1846	62.69	65.82	...	...	...	...
1847	...	...	3	48.10	...	...
1848	...	...	3	63.77	...	...
1849	...	...	3	52.77	...	...
1850	...	...	3	67.88	...	...
1851	...	...	6	59.40	58.36	...
1852	...	...	7	58.77	63.89	...
1853	...	...	11	68.84	74.20	...
1854	...	...	16	50.88	48.35	...
1855	...	...	18	77.31	75.47	...
1856	...	...	17	48.49	46.73	...
1857	...	...	20	60.90	60.63	...
1858	...	...	21	45.22	45.62	...
1859	...	...	26	54.22	49.63	...
1860	...	...	23	57.91	57.63	58.01
1861	...	...	21	73.82	78.32	71.79
1862	...	...	19	59.27	57.86	61.47
1863	...	...	27	42.38	43.37	44.61
1864	...	...	26	59.19	58.63	59.22
1865	...	...	35	68.64	68.35	68.05
1866	...	...	36	59.68	57.09	57.28
1867	...	...	40	69.93	69.57	68.10
1868	...	...	42	44.60	46.79	46.14
1869	...	...	45	48.52	52.10	50.95
Mean of 1847-69	...	...	...	58.32	58.40	58.56
1870	...	...	94	60.17	61.36	63.49
1871	...	...	141	41.46	40.90	44.89
1872	...	...	163	48.36	*	*
Mean of 25 years, 1847-71}	...	...	...	57.74	56.85	57.81

\* The returns for Binfield and Grand View are incomplete for the year 1872.

## APPENDIX No. 2.

*Average Rainfall of each Year from 1847 to 1872, compared with the mean Rainfall of 25 Years, 1847-71.*

YEARS.	Yearly Rainfall.	Compared with Mean of 57.74 Inches.			
		Quantity in Inches.		Percentage.	
1847	Inches.	+	9.64	+	-
	48.10	...	...	10.4	16.7
	63.77	6.03	...	...	...
1850	52.77	...	4.97	...	8.6
	67.88	10.14	...	17.5	...
	1	59.40	1.66	2.8	...
1851	2	58.77	1.03	1.8	...
	3	68.84	11.10	19.2	...
	4	50.88	6.86	...	11.9
1852	5	77.31	19.57	33.9	...
	6	48.49	9.25	...	16
	7	60.90	3.16	5.5	...
1853	8	45.22	12.52	...	21.7
	9	54.22	3.52	...	6.1
	1854	57.91	1.17	...	...
1855	1	73.82	16.08	27.8	...
	2	59.27	1.53	2.6	...
	3	42.88	15.36	...	26.6
1856	4	59.19	1.45	2.5	...
	5	68.64	10.90	18.9	...
	6	59.68	1.94	3.3	...
1857	7	69.93	12.19	21.1	...
	8	44.60	13.14	...	22.7
	9	48.52	9.22	...	15.9
1858	1858	60.17	2.43	4.2	...
	1	41.46	16.28	...	28.2
	2	48.36	9.38	...	16.2
Mean of 25 yrs. 1847-71	57.74	6.62	10.08	11.4	17.4

## APPENDIX No. 3.

*Average Monthly Rainfall of Barbados from 1847 to 1872, with the mean of each Month in the 25 years, 1847-71.*

YEARS.	No. of Stations.	Rainfall in Inches.												Total.
		Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	
1847	3	2.83	.95	1.20	2.98	1.02	2.10	2.27	5.26	10.20	7.11	8.45	3.73	48.10
8	3	4.76	2.04	2.66	1.58	6.74	2.21	6.25	7.53	5.41	11.78	5.79	7.04	63.77
9	3	3.61	2.72	3.90	2.69	2.34	6.68	5.64	6.82	4.74	8.53	1.42	3.73	52.77
1850	3	1.14	2.52	.78	2.96	4.70	10.48	9.01	6.82	3.34	10.17	9.61	6.36	67.88
1	6	1.62	3.01	1.99	1.58	6.13	5.31	6.63	7.	9.25	6.53	4.29	6.05	59.40
2	7	3.30	1.58	1.53	2.17	7.11	2.17	2.49	7.36	3.72	6.53	14.15	6.66	58.77
3	11	4.04	3.94	2.38	3.38	9.26	5.21	3.89	8.08	7.75	10.43	8.36	2.20	68.84
4	16	2.64	1.95	1.43	1.20	1.33	5.56	5.68	5.11	3.97	7.03	11.19	3.79	50.88
5	18	6.96	2.95	1.85	5.49	6.82	6.61	8.	12.84	9.27	5.12	5.98	5.41	77.31
6	17	1.73	2.18	1.19	.81	2.94	5.49	2.86	7.80	5.88	6.15	7.25	4.21	48.49
7	20	2.63	5.78	2.02	1.54	2.64	5.43	7.14	6.33	7.93	6.58	9.74	3.10	60.90
8	21	1.52	1.28	1.40	.96	2.23	4.54	3.69	4.24	3.54	10.46	6.13	5.22	45.22
9	26	2.10	2.64	1.22	1.24	3.56	5.68	5.72	3.21	4.80	10.13	10.18	3.74	54.22
1860	23	2.28	2.85	1.13	2.41	.66	3.13	3.90	7.93	7.31	13.30	7.97	5.09	57.91
1	21	3.49	1.96	2.76	6.35	8.01	9.31	8.28	4.65	6.77	7.60	7.50	7.11	73.82
2	19	7.60	1.12	.31	1.12	3.53	7.18	5.39	7.23	4.74	11.18	7.40	2.36	59.27
3	27	1.19	3.88	2.26	2.26	.56	1.62	3.65	9.34	4.99	2.89	6.45	3.27	42.38
4	26	2.74	2.47	.77	.66	3.07	2.17	7.51	7.37	10.77	9.14	6.31	6.16	59.19
5	35	2.36	2.19	1.39	4.13	5.89	9.19	7.35	8.91	5.07	11.	4.53	6.58	68.64
6	36	3.75	2.75	1.57	1.26	2.74	2.63	6.23	11.89	4.22	8.99	7.85	5.80	59.68
7	40	2.68	4.49	.88	1.64	2.66	10.94	7.50	9.62	8.54	12.74	4.30	3.89	69.93
8	42	4.29	1.74	1.93	.97	1.68	3.45	6.26	5.62	4.63	8.20	4.42	1.40	44.60
9	45	1.53	1.47	1.03	3.34	4.32	3.05	4.42	6.95	4.56	6.99	5.13	5.73	48.52
1870	94	3.96	1.35	.90	.93	2.80	10.15	5.62	5.61	5.03	11.24	8.37	3.38	60.17
1	141	4.13	2.29	1.07	.56	.98	2.71	3.65	5.37	6.70	6.33	4.03	4.08	41.46
2	163	2.10	2.36	.96	1.31	1.55	2.89	2.67	4.10	8.50	4.49	9.77	7.69	48.36
Mean of 25 yrs. 1847- 1871	...	3.26	2.58	1.47	1.99	3.54	5.45	5.70	7.24	6.24	8.69	7.08	4.50	57.74

NOTE.—The yearly total does not always agree exactly with the aggregate of the twelve months, especially in 1871, in which year the former was calculated upon somewhat different data from the monthly averages, the returns from a few additional stations having been included in the yearly average.

## APPENDIX No. 4.

*Monthly Rainfall of Fairfield, in St. Philip, and Monthly Rainfall of Barbados calculated therefrom, in the years 1843-46.*

YEARS.	Rainfall in Inches.											
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.

*Rainfall of Fairfield*

1843	4.99	1.80	2.55	.50	1.59	5.75	5.94	2.04	5.64	5.70	5.91	2.90	45.31
1844	3.01	4.22	1.67	10.69	8.17	8.01	5.17	6.91	6.05	3.34	11.82	5.39	74.45
1845	1.07	2.20	.82	1.21	.99	2.89	7.43	4.35	3.68	4.32	12.11	2.84	43.91
1846	.90	.94	1.09	7.96	3.56	6.78	5.01	6.47	7.13	3.99	5.35	13.51	62.69

*Rainfall of Barbados calculated from the above.*

1843	5.24	1.89	2.68	.52	1.67	6.04	6.24	2.14	5.92	5.98	6.20	3.04	47.57
1844	3.16	4.43	1.75	11.22	8.58	8.41	5.43	7.25	6.35	3.51	12.41	5.66	78.48
1845	1.12	2.31	.86	1.27	1.04	3.03	7.80	4.56	3.86	4.53	12.72	2.98	46.13
1846	.94	.99	1.14	8.36	3.74	7.12	5.26	6.79	7.48	4.19	5.62	14.18	65.82

*Rainfall of each Month, distinguishing whether above or below the average, with number and average of each Section in the 25 years, 1847-1871.*

**APPENDIX No. 5.**

*Rainfall in Inches.*

Years.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Average 1847-71	3.26	2.58	1.47	1.99	3.54	5.45	5.70	7.24	6.24	8.69	7.08	4.50	57.74
+ -	+ -	+ -	+ -	+ -	+ -	+ -	+ -	+ -	+ -	+ -	+ -	+ -	+ -
1847	2.83	.95	1.20	2.98	1.02	2.10	2.27	5.26	10.20	7.11	8.45	5.79	70.04
8	4.76	2.04	2.66	1.58	6.74	2.34	6.03	5.64	6.82	4.74	8.53	1.42	3.73
9	3.61	2.72	3.90	2.69	4.70	10.48	9.01	5.31	6.63	7	9.25	6.53	42.96
1850	1.14	2.52	.78	2.96	1.58	6.13	5.21	2.17	2.49	7.36	8.72	6.53	14.15
1	1.62	3.01	1.99	2.17	7.11	8.39	8.08	7.75	10.43	8.36	6.66	6.36	67.88
2	3.30	1.58	1.53	2.38	3.38	9.26	1.38	5.56	5.68	5.11	8.97	7.03	11.19
9	4.04	3.94	1.95	1.43	1.20	8.00	12.84	9.27	5.12	5.12	5.98	5.41	50.88
4	2.64	1.95	1.85	5.49	6.82	6.61	2.94	5.49	2.86	7.80	5.88	6.15	4.21
5	6.96	2.95	2.18	1.19	.81	2.64	5.43	7.14	6.33	7.93	6.58	9.74	48.49
6	1.73	2.02	1.54	2.28	1.40	.96	2.28	4.54	3.69	4.24	3.54	10.46	45.22
7	2.63	5.78	2.02	1.28	1.22	1.24	3.56	5.68	5.72	3.21	4.86	10.13	54.22
8	1.52	1.28	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	10.18
9	2.16	2.64	2.26	1.18	1.41	.66	3.13	3.90	7.93	7.31	13.30	7.25	42.38
1860	2.26	2.85	1.96	2.76	6.35	8.01	9.31	8.28	4.65	6.77	7.00	7.50	57.91
1	3.49	1.12	1.22	3.1	1.12	3.53	7.18	5.39	7.23	4.74	11.18	7.40	73.82
2	7.60	1.19	3.88	2.26	2.26	.56	1.62	8.65	9.34	4.99	2.89	6.45	2.36
3	2.74	2.47	.77	.66	3.07	2.17	7.51	7.37	10.77	9.14	6.31	6.16	42.38
4	2.36	2.19	1.39	4.13	5.89	9.19	2.74	2.63	6.23	8.91	5.07	11.00	48.58
5	3.75	2.75	1.57	1.26	1.26	2.66	10.94	7.50	9.62	4.22	8.99	7.85	5.80
6	2.68	4.49	.88	1.64	1.64	3.45	6.26	4.42	6.95	5.03	11.24	8.37	59.68
7	4.29	1.74	1.93	.97	1.68	3.05	4.42	5.62	4.63	8.20	4.42	1.40	44.60
8	1.53	1.47	1.03	3.34	4.32	2.80	10.15	5.61	5.61	6.99	5.13	5.73	48.52
9	3.96	1.35	.90	.93	1.07	.56	.98	2.71	3.65	6.70	6.33	4.03	4.08
1870	4.13	2.29	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	41.46
1	10	11	11	10	11	11	11	12	11	10	12	13	12
Above { No. 11	10	11	11	10	11	11	11	12	11	10	12	13	12
Average ... 4.53	3.30	2.26	3.47	6.25	7.93	6.99	8.97	10.88	2.08	6.10	1.10	1.10	1.10
Below { No. 14	14	15	14	14	15	14	13	14	15	13	12	13	12
Average ... 2.07	1.81	1.62	1.14	2.08	3.27	4.09	5.73	4.21	6.58	4.90	3.30	3.30	3.30
													Total of Months. 134 660

APPENDIX No. 6.  
Percentage Excess or Deficiency of each Month, compared with the mean of the 25 years, 1847-1871.

YEARS,	Percentage Excess or Deficiency of each Month, compared with the mean of the 25 years, 1847-1871.											Total.	
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	
Mean of 1847-71, Inches ...	3.26	2.58	1.47	1.99	3.54	5.45	5.70	7.24	6.24	8.69	7.08	4.50	5774
1847	+ 13	+ 63	+ 18	+ 50	+ 71	+ 61	+ 62	+ 27	+ 63	+ 16	+ 19	+ 17	+ 17
8	- 46	- 21	- 80	- 35	- 34	- 22	- 58	- 1	- 4	- 6	- 24	- 18	10
9	- 11	- 5	- 167	- 47	- 49	- 20	- 75	- 3	- 58	- 6	- 46	- 2	9
1850	- 65	- 2	- 35	- 47	- 49	- 20	- 104	- 60	- 56	- 2	- 24	- 17	17
1	- 50	- 13	- 35	- 49	- 70	- 161	- 4	- 32	- 12	- 24	- 25	- 39	3
2	- 1	- 39	- 4	- 9	- 104	- 21	- 40	- 77	- 49	- 20	- 18	- 48	2
3	- 24	- 53	- 62	- 70	- 89	- 62	- 2	- Equal	- 29	- 36	- 19	- 58	19
4	- 19	- 24	- 3	- 3	- 176	- 92	- 21	- Equal	- 41	- 15	- 20	- 38	10
5	- 113	- 14	- 26	- 19	- 59	- 17	- 1	- 49	- 8	- 29	- 2	- 34	10
6	- 47	- 16	- 19	- 59	- 23	- 17	- 1	- 49	- 6	- 29	- 6	- 6	16
7	- 19	- 124	- 37	- 23	- 25	- Equal	- 25	- 12	- 27	- 24	- 24	- 37	5
8	- 53	- 50	- 5	- 52	- 37	- Equal	- 16	- 35	- 41	- 43	- 20	- 13	16
9	- 95	- 2	- 17	- 38	- Equal	- 4	- Equal	- 56	- 23	- 17	- 44	- 13	17
1860	- 30	- 10	- 23	- 21	- 81	- 43	- 9	- 17	- 53	- 13	- 13	- 13	6
1	- 7	- 24	- 88	- 21.9	- 126	- 61	- 45	- 36	- 9	- 12	- 6	- 58	28
2	- 133	- 57	- 89	- 43	- Equal	- 32	- 5	- Equal	- 24	- 29	- 5	- 47	3
3	- 63	- 50	- 54	- 13	- 84	- 70	- 36	- 29	- 20	- 67	- 9	- 87	27
4	- 16	- 4	- 48	- 67	- 13	- 60	- 32	- 2	- 73	- 5	- 11	- 35	2
5	- 27	- 15	- 5	- 107	- 66	- 68	- 29	- 23	- 19	- 27	- 36	- 46	19
6	- 15	- 7	- 7	- 37	- 23	- 25	- 52	- 9	- 48	- 32	- 3	- 29	3
7	- 18	- 74	- 40	- 18	- 101	- 52	- 37	- 9	- 33	- 37	- 47	- 39	21
8	- 32	- 32	- 31	- 51	- 22	- 45	- 28	- 4	- 27	- 26	- 6	- 38	23
9	- 53	- 43	- 29	- 68	- 21	- 89	- 1	- 23	- 19	- 29	- 18	- 28	16
1870	- 21	- 47	- 39	- 53	- 72	- 50	- 36	- 7	- 27	- 43	- 9	- 25	4
1	- 27	- 11	- 27	- 72	-	-	-	-	-	-	-	-	28
Above	No. ....	11	10	11	9	11	11	10	12	13	13	13	14
	Average ...	39	35	54	74	85	45	27	35	25	25	21	12
Below	No. ....	14	15	14	14	14	13	12	13	13	13	12	10
	Average ...	96	30	28	42	44	43	31	22	26	24	31	17
					2 equal	1 equal	2 equal	1 equal	2 equal	1 equal	1 equal	33	1

APPENDIX No. 7.

Aggregate Rainfall in inches of the several months added together in each year from 1847 to 1872, and of the mean of 25 years, 1847-71.

YEARS.	Jan.	Jan. and Feb.	Jan. to March.	Jan. to April.	Jan. to May.	Jan. to June.	Jan. to July.	Jan. to Aug.	Jan. to Sept.	Jan. to Oct.	Jan. to Nov.	Jan. to Dec.
1847	2.83	3.78	4.98	7.96	7.98	11.08	13.85	18.61	28.81	35.92	44.37	48.10
8	4.76	6.80	9.46	11.04	17.78	19.99	26.24	33.77	39.18	50.96	56.75	63.77
9	3.61	6.33	10.23	12.92	15.26	21.89	27.58	34.35	39.09	47.62	49.04	52.77
1850	1.14	3.66	4.44	7.40	12.10	22.58	31.59	38.41	41.75	51.92	61.53	67.88
1	1.62	4.63	6.62	8.20	14.33	19.64	26.27	33.27	42.52	49.05	53.34	59.40
2	3.30	4.88	6.41	8.58	15.69	17.86	20.35	27.71	31.43	37.96	52.11	58.77
3	4.04	7.98	10.36	13.74	23.	28.21	32.10	40.18	47.83	58.26	66.62	68.84
4	2.64	4.59	6.02	7.22	8.85	14.11	19.79	24.90	28.87	35.90	47.09	50.88
5	6.96	9.91	11.76	17.25	24.07	30.88	38.68	51.52	60.79	65.91	71.89	77.31
6	1.73	3.91	5.10	5.91	8.55	14.34	17.20	25.	30.88	37.03	44.28	48.49
7	2.63	8.41	10.43	11.97	14.61	20.04	27.18	33.51	41.44	48.02	57.76	60.90
8	1.52	2.80	4.20	5.16	7.39	11.93	15.62	19.86	23.40	33.86	39.97	45.22
9	2.10	4.74	5.96	7.20	10.76	16.44	22.16	25.37	30.17	40.30	50.48	54.22
1860	2.28	5.18	6.26	8.67	9.33	12.86	16.26	24.19	31.50	44.80	52.77	57.91
1	3.49	5.45	8.21	14.56	22.57	31.93	40.21	44.86	51.63	59.23	66.73	73.82
2	7.60	8.72	9.03	10.15	13.68	20.86	26.25	33.48	38.22	49.38	56.78	59.27
3	1.19	5.07	7.33	9.59	10.15	11.77	15.42	24.76	29.75	31.74	33.19	42.38
4	2.74	5.21	5.98	6.64	9.71	11.88	19.39	26.76	37.53	46.67	52.90	59.19
5	2.36	4.55	5.94	9.07	14.96	25.18	32.53	41.44	46.51	57.51	62.04	68.64
6	3.75	6.50	8.07	9.33	12.07	14.70	20.93	32.82	37.04	46.03	53.88	59.68
7	2.68	7.17	8.05	9.69	12.35	23.29	30.79	40.41	48.95	61.69	65.99	69.93
8	4.29	6.03	7.96	8.93	10.61	14.06	20.32	25.94	30.57	38.77	43.19	44.60
9	1.53	3.00	4.03	7.37	11.69	14.74	19.16	26.11	30.67	37.66	42.79	48.52
1870	3.94	5.31	6.21	7.14	9.94	20.99	25.71	31.32	36.35	47.69	56.96	60.17
1	4.13	6.42	7.49	8.05	9.03	11.74	15.39	20.76	27.46	33.79	37.92	41.46
2	2.10	4.46	5.42	6.73	8.28	11.17	13.84	17.94	26.44	30.93	40.70	48.37
Mean of 25 years, 1847-71.		3.26	5.84	7.31	9.30	12.84	18.29	23.97	31.23	37.47	46.16	53.24
												57.74

APPENDIX No. 8.  
*Comparison between Years of Highest and Lowest Rainfall, viz. above or below mean of 25 years, 1847-1871.*

Inches of Rainfall.													
Years.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sep t.	Oct.	Nov.	Dec.	Total.
1855	6.96	2.95	1.85	5.49	6.82	6.61	8.00	12.84	9.07	5.12	5.98	5.41	77.31
61	3.49	1.96	2.76	6.35	8.01	9.31	8.28	4.65	6.77	7.60	7.50	7.11	73.82
67	2.68	4.49	.88	1.64	2.66	10.94	7.50	9.62	8.54	12.74	4.30	3.89	69.93
53	4.04	3.94	2.38	3.38	9.26	5.21	3.89	8.08	7.75	10.48	8.36	2.20	68.84
65	2.36	2.19	1.39	4.13	5.89	9.22	7.35	8.91	5.09	11.	4.30	6.58	68.64
60	1.14	2.52	.78	2.96	4.70	10.48	9.01	6.82	8.34	10.17	9.61	6.36	67.88
48	4.76	2.04	2.66	1.58	6.74	2.21	6.25	7.53	5.41	11.78	5.79	7.04	63.77
57	2.63	5.78	2.02	1.54	2.64	5.43	7.14	6.83	7.93	6.58	9.74	3.10	60.90
70	3.96	1.35	.90	.93	2.80	10.15	5.62	5.61	5.03	11.24	8.37	3.38	60.17
66	3.75	2.75	1.57	1.26	2.74	2.63	6.23	11.89	4.22	8.99	7.85	5.80	59.68
51	1.62	3.01	1.99	1.58	6.13	5.31	6.63	7.00	9.25	6.53	4.29	6.05	59.40
62	7.60	1.12	.81	1.12	3.53	7.18	5.39	7.23	4.74	11.18	7.40	2.36	59.27
64	2.74	2.47	.77	.66	3.07	2.17	7.51	7.97	10.77	9.14	6.31	6.16	59.19
52	3.30	1.58	1.53	2.17	7.11	2.17	2.49	7.36	8.72	6.53	14.15	6.66	58.77
60	2.28	2.85	1.03	2.41	.66	3.13	3.90	7.93	7.31	13.30	7.97	5.09	57.91
<b>Mean of above 15 Years</b>		3.55	2.72	1.52	2.48	4.85	6.14	6.36	7.94	6.61	9.49	7.46	64.36
1859	2.10	2.64	1.22	1.24	3.56	5.68	5.72	3.21	4.80	10.13	10.18	3.74	54.22
49	3.61	2.72	3.90	2.69	2.34	6.63	5.64	6.82	4.74	8.53	1.42	3.73	52.77
54	2.64	1.95	1.43	1.20	1.33	5.56	5.68	5.11	3.97	7.03	11.19	3.79	50.88
69	1.53	1.47	1.03	3.34	4.32	3.05	4.42	6.95	4.56	6.99	5.13	5.73	48.52
56	1.73	2.18	1.19	.81	2.94	5.49	2.86	7.80	5.88	6.15	7.25	4.21	48.49
47	2.83	.95	1.20	2.98	1.02	2.10	2.27	5.23	10.20	7.11	8.45	3.73	48.10
58	1.52	1.28	1.40	.96	2.23	4.54	3.69	4.24	8.54	10.46	6.13	5.22	45.92
68	4.29	1.74	1.93	.97	1.68	3.45	6.26	5.62	4.63	8.20	4.42	1.40	44.60
63	1.19	3.88	2.26	2.26	.56	1.62	3.65	9.34	4.99	2.89	6.45	3.27	42.38
71	4.13	2.29	1.07	.56	.98	2.71	3.65	5.37	6.70	6.33	4.03	4.08	41.46
<b>Mean of above 10 Years</b>		2.11	1.66	1.70	2.09	4.09	4.38	5.97	5.40	7.38	6.46	3.89	47.66

## APPENDIX No. 9.

*Abstract of preceding Table, comparing Highest and Lowest Years with one another, and with the mean of 25 years, 1847-1871.*

## APPENDIX No. 10.

*Similar comparison of the Three Highest with the Three Lowest Years, and of the Three Highest Months with the Three Lowest Months, of the period of 25 years, 1847-71.*

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Average of 3 Highest Years, inches.	4.38	8.13	1.83	4.49	4.50	8.55	7.93	9.04	8.19	8.49	5.93	5.47	73.71
3 Lowest " "	3.20	2.64	1.75	1.26	1.07	2.65	4.52	6.78	5.44	5.81	4.97	2.92	42.81
25 Years, inches.....	3.26	2.58	1.47	1.99	3.54	5.45	5.70	7.24	6.24	8.69	7.08	4.50	57.74
3 Highest compared with mean of 25 years. Excess, inches.....	1.12	.55	.36	2.50	.96	3.50	2.23	1.80	1.95	...	...	.97	15.94
Deficiency, inches.....	...	...	...	...	...	...	...	...	...	...	...	1.15	
3 Lowest compared with mean of 25 years. Excess, inches.....	-.06	-.28	...	-.73	2.47	2.83	1.18	.46	.80	2.88	2.11	1.58	15.10
Deficiency, inches.....	...	...	...	...	...	...	...	...	...	...	...	...	
Percentage Proportion of Difference.													
3 Highest + .....	7.	8.4	2.9	15.7	6.	22.	14.	11.8	12.2	1.3	7.2	6.1	100.
3 Lowest - .....	..	..	..	..	4.9	16.4	18.8	7.8	8.1	19.2	14.	10.1	100.
3 Lowest + .....	0.4	0.4	1.8	...	...	...	...	...	...	...	...	...	
Average of 3 Highest Months.....	6.44	4.73	8.11	5.32	8.18	10.52	8.43	11.45	10.08	12.61	11.84	6.93	
3 Lowest " .....	1.28	1.12	.62	.81	.75	1.96	2.54	4.03	3.53	3.72	3.34	1.99	
Difference in inches.....	5.16	8.61	2.49	4.51	7.38	8.56	5.89	7.42	6.55	8.89	8.50	4.94	
Ditto, percentage.....	80.	76.	80.	85.	90.	81.	70.	65.	65.	70.	72.	71.	

APPENDIX No. 11.

Rainfall, in inches, of each Month in the Seven Wettest and Seven Driest Years, with average monthly Excess or Deficiency, as computed with mean of 25 years, 1847-71.

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Wet Years.													
Mean 1847-71.													
1848	3.26	2.58	1.47	1.99	3.54	5.45	5.70	7.24	6.24	8.69	7.08	4.50	57.74
50	4.76	2.04	2.66	1.58	6.74	2.21	6.25	7.53	5.41	11.78	5.79	7.04	63.77
53	1.14	2.52	.78	2.96	4.70	10.48	9.01	6.82	8.34	10.17	9.01	6.36	67.88
55	4.04	3.94	2.38	3.38	9.26	5.21	9.89	8.08	7.75	10.43	8.36	2.20	68.84
61	6.96	2.95	1.85	5.47	6.82	6.61	8.00	12.84	9.27	5.12	5.98	5.41	77.31
65	3.49	1.96	2.76	6.35	8.01	9.31	8.28	4.65	6.77	7.60	7.50	7.11	73.82
P	2.36	2.19	1.89	4.13	5.89	9.19	7.35	8.91	5.07	11.00	4.53	6.58	68.64
67	2.68	4.40	.88	1.64	2.66	10.94	7.50	9.62	8.54	12.74	4.30	3.89	69.93
Dry Years.													
1847	2.83	.95	1.20	2.98	.81	1.02	2.10	2.27	5.26	10.20	7.11	8.45	37.34
56	1.73	2.18	1.19	.81	2.94	5.49	2.23	7.80	5.88	6.15	7.25	4.21	48.49
58	1.52	1.28	1.40	.96	2.26	4.54	3.69	4.24	3.54	10.46	6.18	5.22	45.22
63	1.10	3.88	2.26	.56	1.62	3.65	9.34	4.99	2.89	6.45	3.27	42.38	
68	4.29	1.71	1.93	.97	1.68	3.45	6.26	5.62	4.63	8.20	4.42	1.40	44.60
69	1.53	1.47	1.03	3.34	4.32	9.05	4.42	6.95	4.56	6.99	5.13	5.73	48.52
71	4.13	2.29	1.07	.56	.98	2.71	3.65	5.37	6.70	6.33	4.03	4.08	41.44
Average Monthly Deficiency in inches below mean of 25 years, 1847-71.....													
Percentage Deficiency of each month													

APPENDIX No. 12.

*Monthly Rainfall in Seven Wettest and Seven Driest Years, showing the percentage of Excess or Deficiency compared with the mean of 25 Years, 1847-71.*

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
<i>Wet Years.</i>													
1848	46	65	21	80	47	49	20	90	58	9	4	13	35
50	24	53	2	62	70	161	33	92	58	32	6	46	17
53	113	14	26	176	92	4	21	40	32	12	24	20	36
55	7	27	24	88	219	126	61	45	77	40	49	41	51
61	18	15	5	107	66	68	25	101	32	9	36	12	19
65	18	74	40	18	25	32	33	37	37	19	27	6	34
67												36	28
No. of Months above mean (Total, 56) .....	4	3	4	5	6	5	5	6	5	5	5	18	10
No. of Months below mean (Total, 28) .....	8	4	3	2	1	2	1	2	1	2	2	41	17
<i>Dry Years.</i>													
1847	13	63	18	50	59	71	61	62	27	63	6	16	17
56	47	16	19	52	37	1	16	49	8	29	2	29	16
58	53	50	5	52	84	70	35	41	20	20	13	16	22
63	63	50	54	13	51	52	37	9	29	22	6	67	27
68	32	32	31	29	68	22	45	28	22	26	6	38	23
69	27	53	43	27	72	72	50	36	26	27	19	28	16
71												27	28
No. of Months above mean (Total, 21) .....	2	1	2	3	1	1	1	2	2	1	3	2	17
No. of Months below mean (Total, 63) .....	5	6	5	4	6	6	6	5	5	6	4	5	7

## APPENDIX No. 13.

*Number of times that each Month has ranked first or second, as having received the heaviest or the lightest Rainfall in 25 years, from 1847 to 1871.*

MONTHS.	Heaviest.		Lightest.	
	First.	Second..	First.	Second.
January .....	...	1	...	3
February .....	...	...	2	7
March .....	...	...	10	6
April .....	...	...	10	4
May .....	...	...	2	3
June .....	2	3	...	...
July .....	...	2	...	...
August .....	4	5	...	...
September .....	4	2	...	...
October .....	11	7	...	...
November .....	4	5	1	...
December .....	...	...	...	2
TOTAL.....	25	25	25	25

## APPENDIX No. 14.

*Number of times that each Month has received one or more inches of Rain in 25 years, from 1847 to 1871.*

RAINFALL.	Oct.	Aug.	Nov.	Sept.	June.	Dec.	July.	May.	Jan.	Feb.	April.	Mar.	Total	Per-cent-age.
Inches.														
Above 1	...	...	1	...	...	...	...	...	...	...	...	...	1	.3
13	1	...	...	...	...	1	...	...	...	...	...	...	1	.3
12	1	1	...	...	...	...	...	...	...	...	...	...	3	1
11	4	1	1	...	...	...	...	...	...	...	...	...	6	2
10	4	1	2	2	...	...	...	...	...	...	...	...	9	3
9	2	2	2	3	3	...	1	1	...	...	...	...	13	4.3
8	3	2	3	1	...	...	2	1	...	...	...	...	12	4
7	3	7	5	3	1	2	4	1	1	...	...	...	27	9
6	5	4	3	2	2	5	4	3	1	...	1	...	30	10
5	1	5	3	4	6	5	5	1	...	1	1	...	32	10.7
4	...	2	5	7	1	2	1	2	4	1	1	...	26	8.7
3	...	1	...	4	3	8	5	3	5	3	2	...	35	11.7
2	1	...	...	...	6	1	3	7	8	11	...	...	...	16.3
1	...	...	1	...	1	1	...	3	6	8	8	13	41	13.7
Under 1	...	...	...	...	...	...	...	3	...	1	6	5	15	5

## APPENDIX No. 15.

*Order in which the several Months ranked, according to the Rainfall of each in the 25 years from 1847 to 1871.*

ORDER OF MONTHS.	Number of times each Month ranked according to order in first column.												
	Oct.	Aug.	Nov.	Sept.	June.	Dec.	July.	May.	Jan.	Feb.	April.	Mar.	Total.
1	11	4	4	4	2	...	2	...	1	...	...	...	...
2	7	5	5	2	3	...	6	3	2	1	...	...	...
3	2	5	4	1	1	3	6	1	2	1	...	...	...
4	2	3	3	4	3	1	5	2	1	5	...	...	...
5	1	6	2	3	2	6	3	1	2	1	1	...	...
6	...	2	6	1	6	1	4	1	1	2	1	1	...
7	1	...	2	4	5	2	1	5	4	...	1	2	...
8	...	1	2	1	1	3	3	2	5	2	3	2	...
9	...	1	...	...	2	2	2	3	2	2	6	1	...
10	1	...	...	...	5	...	1	2	7	3	1	5	...
11	...	...	...	...	2	...	...	4	3	7	3	6	...
12	...	...	1	...	...	...	...	2	...	2	10	10	...

## APPENDIX No. 16.

*Rainfall at Binfield, in St. Joseph, at an elevation of 1,064 ft., for 21 years from 1851 to 1871.*

MONTHS.	Average Rainfall of 21 years, 1851-1871.	Average Rainfall, excluding Exceptional Months.			No. of Exceptional Months.	Limits of Exceptional Months.
		No. of Years.	Limits of Ordinary Rainfall	Average.		
January .....	3.89	13	From 2. to 5.0	3.32	3	5
February .....	3.22	17	" 1.50 " 4.50	2.22	0	4
March .....	1.82	15	" 1. " 3.0	1.72	3	3
April .....	2.53	15	" 1. " 4.50	1.89	3	8
May .....	4.79	11	" 1.50 " 5.50	3.53	4	6
June .....	6.16	12	" 2.50 " 7.50	4.95	3	6
July .....	6.38	16	" 4.50 " 9.45	7.36	5	0
August .....	7.86	14	" 4.50 " 10.	7.30	3	4
September .....	7.36	13	" 4.50 " 9.50	8.22	3	5
October .....	9.46	12	" 6.0 " 11.50	8.66	3	6
November .....	8.46	12	" 4.50 " 10.0	7.06	3	6
December .....	5.37	12	" 3.50 " 6.50	5.09	4	5
		Total..	67.30	61.32		

*Rainfall at Fairfield (1843 to 1850) and at Halton (1851 to 1871), both in St. Philip, at an elevation of 156 and 280 feet respectively, for 29 years, from 1843 to 1871.*

MONTHS.	Average Rainfall for 29 years, 1843-1871.	Average Rainfall, excluding Exceptional Months.			No. of Exceptional Months.	Limits of Exceptional Months.
		No. of Years.	Limits of ordinary Rainfall.	Average.		
January.....	2.86	22	Inches. From 1.50 to 4.50	2.83	4	3
February.....	2.34	23	" 1 " " 3 "	2.04	1	5
March.....	1.61	18	" 0.50 " 3 "	1.44	1	3
April.....	2.61	18	" 0.50 " 4.50	1.94	1	4
May.....	3.84	19	" 1 " " 4.5	3.22	4	6
June.....	5.35	17	" 2.50 " 7 "	5.10	6	6
July.....	5.36	23	" 3 " " 7.50	5.45	3	3
August.....	6.82	22	" 4 " " 10 "	6.59	4	3
September.....	5.72	20	" 4 " " 8 "	5.63	5	4
October.....	8.08	20	" 4 " " 11 "	7.60	4	5
November.....	6.98	22	" 3.50 " 9 "	6.18	3	5
December.....	4.91	17	" 3 " " 7 "	4.69	5	4
Total.....	56.48			52.71	41	51

## APPENDIX No. 18.

*Formula for finding Mean and Limits of Ordinary Average of Monthly Rainfall.*

1. Find totals of the Rainfall of the several months in the years recorded ( $= a$ ).
2. Calculate average thereof ( $\frac{a}{\text{number of years}} = b = \text{Column 2}$ ).
3. Select and find totals, separately, of months at extreme limits, above and below average ( $= c$  and  $d$ ), columns 6, 7, and 8.
4. Add these totals together ( $= e$ ).
5. Deduct this sum  $e$  from  $a$ , above ( $= f$ ).
6. Divide the result  $f$  by the reduced number of years (column 3) ( $= g$ , or rectified average, column 5).
7. Insert, as limits, the rainfalls not selected to form  $c$  and  $d$  (column 4).

*Example, applied to Binfield.*

January.

1. Aggregate of 21 years = 81.80 inches .....  $a$

$$2. \quad \frac{81.80}{21} = 3.89 \quad , \quad b$$

3. Extreme High.    Extreme Low.

6.78	1.01
8.52	1.67
8.96	1.05
5.68	
5.00	3.73 = ..... $d$

$$4. \quad \underline{\text{Total } 34.94 = ..... c}$$

$$5. \quad 34.94 + 3.73 = 38.67 \quad e$$

$$6. \quad 81.80 - 38.67 = 43.13 \quad f$$

$$7. \quad \frac{43.13}{21 - 8 = 13} = 3.32 \quad g$$

7. Limits, 2.00 and 5.00 inches.

## APPENDIX No. 19.

*Statement of the Daily Rainfall at three Stations in Barbados, viz. Binfield, in St. Joseph's; Husbands, in St. Lucy's; and Halton, in St. Philip's; in each year from 1847 to 1872.*

---

Column A represents Binfield, 1,064 feet above the sea.

" B	"	Husbands	184	"	"	"
" C	"	Halton	280	"	"	"

NOTE 1.—In these Tables there is a want of uniformity in the method of printing centesimal parts of an inch, which escaped notice in the MSS. until it was too late to correct it in the proofs.

The parts of an inch less than one-tenth are printed indiscriminately with or without the cypher before the unit, and the decimal point is placed before the centesimal unit. Thus, in the first column at Page 58, '7 and '05 mean similar divisions of an inch, viz. 7 and 5 hundredths respectively.

NOTE 2.—At Husbands, during the earlier years, up to the end of the year 1851, the rainfall was not recorded daily with regularity, but sometimes after the lapse of two, three, or even more, days. After 1851 the daily records at this and the other two stations are correct, with very few exceptions. In the years 1849–53 some misprints occur, owing to a misunderstanding of the MSS. The necessary corrections will be found in the list of errata.

## APPENDIX

1847.]

DAYS.	January.			February.			March.			April.			May.			June.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	...	...	...	23	...	...	...	...	...	6	...	...	...	...	...	...	...
2	...	30	...	...	...	...	...	...	...	...	10	...	...	1	...	...	...	...
3	...	10	...	...	...	...	...	...	...	...	7	...	...	...	...	...	...	...
4	...	7	...	...	1	...	...	...	1	...	...	...	...	...	...	...	1	...
5	...	05	...	...	...	...	...	...	1	...	11	...	...	...	...	...	6	...
6	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
8	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
10	...	6	...	...	...	...	...	5	...	...	34	...	...	...	...	...	63	...
11	...	23	...	...	1	...	...	...	...	...	26	...	...	...	...	...	...	...
12	...	16	...	...	5	...	...	1	...	...	...	...	...	...	...	...	41	...
13	...	14	...	...	...	...	...	2	...	...	12	...	...	...	...	...	...	...
14	...	9	...	...	15	...	...	5	...	...	16	...	...	48	...	...	1	...
15	...	5	...	...	6	...	...	...	...	...	3	...	...	8	...	...	...	...
16	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	10	...
17	...	28	...	...	1	...	...	10	...	...	...	...	...	...	...	...	8	...
18	...	...	...	...	6	...	...	10	...	...	11	...	...	...	...	...	3	...
19	...	2	...	...	9	...	...	...	...	...	...	...	...	1	...	...	...	...
20	...	25	...	...	2	...	...	1	...	...	27	...	...	...	...	...	...	...
21	...	23	...	...	2	...	...	...	...	...	6	...	...	...	...	...	...	...
22	...	6	...	...	2	...	...	1	...	...	10	...	...	...	...	...	4	...
23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
24	...	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
26	...	4	...	...	...	...	...	47	...	...	...	...	...	...	...	...	{	...
27	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
28	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
29	...	...	...	...	...	...	...	13	...	...	...	...	...	4	...	...	42	...
30	...	2	...	...	...	...	...	1	...	...	6	...	...	6	...	...	8	...
31	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL	...	2.62	...	...	.75	...	...	1.00	...	...	1.85	...	...	.68	...	...	1.88	...

No. 19.

[1847.]

DAYS.	July.			August.			September.			October.			November.			December.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	.05	...	...	.02	...	...	.48	...	...	.03	...	...	.25	...	...	.06	...
2	...	.1	...	...	.50	...	...	.4	...	...	...	...	...	.290	...	...	...	...
3	...	.1	...	...	.23	...	...	1.28	...	...	...	...	...	.70	...	...	.15	...
4	...	...	...	...	.16	...	...	.23	...	...	...	...	...	...	...	...	...	...
5	...	1.67	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	...	.1	...	...	.10	...	...	.13	...	...	.4	...	...	.27	...	...	...	...
7	...	.2	...	...	1.15	...	...	.31	...	...	.71	...	...	...	...	...	.2	...
8	...	.36	...	...	...	...	...	...	...	...	...	...	...	.4	...	...	.1	...
9	...	.3	...	...	...	...	...	.64	...	...	...	...	...	.3	...	...	.1	...
10	...	.3	...	...	.9	...	...	1.55	...	...	.73	...	...	.1	...	...	...	...
11	...	.1	...	...	.1	...	...	...	...	...	.17	...	...	.5	...	...	.1	...
12	...	.51	...	...	...	...	...	...	...	...	.9	...	...	...	...	...	.14	...
13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.12	...
14	...	...	...	...	.25	...	...	1.34	...	...	.40	...	...	.99	...	...	.1	...
15	...	.4	...	...	.9	...	...	...	...	...	.9	...	...	.79	...	...	.63	...
16	...	...	...	...	.5	...	...	1.89	...	...	.9	...	...	.3	...	...	.24	...
17	...	...	...	...	.10	...	...	.4	...	...	...	...	...	.4	...	...	...	...
18	...	...	...	...	.5	...	...	.56	...	...	...	...	...	.4	...	...	.45	...
19	...	...	...	...	.5	...	...	.36	...	...	...	...	...	...	...	...	.1	...
20	...	...	...	...	.2	...	...	.27	...	...	.28	...	...	...	...	...	...	...
21	...	.5	...	...	...	...	...	.3	...	...	...	...	...	...	...	...	...	...
22	...	.4	...	...	...	...	...	1.27	...	...	.3	...	...	.53	...	...	.3	...
23	...	.20	...	...	.10	...	...	.50	...	...	.1	...	...	.26	...	...	...	...
24	...	...	...	...	.2	...	...	.22	...	...	.11	...	...	.11	...	...	...	...
25	...	...	...	...	.1	...	...	.16	...	...	.25	...	...	.7	...	...	...	...
26	...	.36	...	...	...	...	...	...	...	...	.72	...	...	...	...	...	.33	...
27	...	...	...	...	.16	...	...	.5	...	...	.70	...	...	.3	...	...	.24	...
28	...	...	...	...	1.80	...	...	.57	...	...	.66	...	...	...	...	...	...	...
29	...	...	...	...	.2	...	...	.45	...	...	.43	...	...	.61	...	...	.3	...
30	...	.5	...	...	.1	...	...	...	...	...	.94	...	...	.50	...	...	.1	...
31	...	...	...	...	.1	...	...	...	...	...	.30	...	...	...	...	...	.22	...
TOTAL	...	8.35	...	...	5.00	...	...	12.37	...	...	6.78	...	...	8.25	...	...	2.72	...

## APPENDIX 19—

1848.]

DAYS.	January.			February.			March.			April.			May.			June.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	-35	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	...	1.34	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	...	-1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	...	-3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	-4	...
5	...	-5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	...	-28	...	...	...	...	...	...	...	...	...	...	...	...	...	...	-21	...
7	...	-3	...	...	...	...	...	10	...	...	...	...	...	...	18	...	...	-10
8	...	-2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9	...	-8	...	...	-01	...	...	...	...	...	...	...	...	...	...	...	...	...
10	...	...	...	...	-5	...	...	...	...	...	...	...	...	...	...	...	...	-9
11	...	...	...	...	-2	...	...	5	...	...	...	...	...	...	...	...	...	...
12	...	-5	...	...	-9	...	...	6	...	...	...	...	...	...	...	...	...	...
13	...	...	...	...	...	...	...	...	...	...	...	...	...	43	...	...	...	...
14	...	-3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15	...	-1	...	...	...	...	...	...	...	...	...	9	...	...	...	...	...	-25
16	...	-15	...	...	-7	...	...	...	...	...	...	...	...	...	...	...	...	...
17	...	-36	...	...	-48	...	...	-31	...	...	...	...	...	...	1.04	...	...	...
18	...	-8	...	...	...	...	...	-1	...	...	...	...	...	...	...	...	...	...
19	...	-45	...	...	-1	...	...	-4	...	...	...	...	...	...	...	...	...	1.25
20	...	-5	...	...	-10	...	...	...	...	...	...	...	...	...	-37	...	...	...
21	...	-15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
22	...	...	...	...	...	...	...	-9	...	...	7	...	...	...	...	...	...	...
23	...	-3	...	...	...	...	...	-16	...	...	...	...	...	...	...	...	...	...
24	...	-8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	-21
25	...	-5	...	...	-8	...	...	...	...	...	...	-30	...	...	...	...	...	-35
26	...	...	...	...	-1	...	...	...	...	...	...	...	...	...	...	...	...	...
27	...	...	...	...	-3	...	...	...	...	...	...	...	...	...	...	...	...	...
28	...	...	...	...	-9	...	...	...	...	...	...	...	...	...	1.07	...	...	...
29	...	...	...	...	-8	...	...	...	...	...	...	...	...	...	...	...	...	...
30	...	...	...	...	...	...	...	...	...	...	...	-31	...	...	...	...	...	-5
31	...	...	...	...	...	...	...	-14	...	...	...	...	...	...	-94	...	...	...
TOTAL	...	3.68	...	...	1.12	...	...	.96	...	...	...	-90	...	...	...	...	2.55	...

*continued.*

[1848.]

DAYS.	July.			August.			September.			October.			November.			December.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	...	...	...	...	...	...	...	...	...	...	...	...	40	...	...	...	...
2	...	11	...	...	...	...	...	13	...	...	1·12	...	...	...	...	...	48	...
3	...	13	...	...	...	...	...	20	...	...	3·75	...	...	...	...	...	...	...
4	...	89	...	...	...	...	...	...	...	...	1·54	...	...	...	...	...	...	...
5	...	...	...	...	37	...	...	...	...	...	...	...	...	...	...	...	...	...
6	...	...	...	...	...	...	...	...	...	...	...	...	...	1·50	...	...	...	...
7	...	32	...	2·95	...	...	...	...	...	...	...	...	...	...	...	...	...	...
8	...	...	...	1·62	...	...	3·30	...	...	...	...	...	...	...	...	...	...	...
9	...	...	...	1·52	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10	...	...	...	...	19	...	...	...	...	...	...	...	...	...	...	...	...	...
11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	49	...	...
12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	...	...	...	...	...	...	23	...	...	...	...	...	...	...	...	...	...	...
14	...	15	...	...	...	...	1·73	...	...	...	...	...	...	...	...	...	81	...
15	...	...	...	13	...	...	...	...	...	...	1·78	...	...	...	...	...	...	...
16	...	86	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...
17	...	...	...	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18	...	...	...	...	...	...	...	...	...	...	36	...	...	...	...	...	...	...
19	...	36	...	...	...	...	...	...	...	...	...	...	...	...	...	...	19	...
20	...	...	...	...	...	...	1·50	...	...	1·50	...	...	...	...	...	...	...	...
21	...	...	...	1·75	...	...	...	...	...	...	...	...	...	59	...	...	35	...
22	...	45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
23	...	...	...	...	...	...	3	...	...	1·80	...	...	...	13	...	...	...	...
24	...	...	...	10	...	...	...	...	...	...	...	...	...	...	...	...	50	...
25	...	...	...	...	...	...	35	...	...	...	...	...	...	...	...	...	23	...
26	...	...	...	31	...	...	...	...	...	1·15	...	...	...	...	...	...	...	...
27	...	1·16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	65	...
28	...	...	...	...	...	...	...	...	...	20	...	...	...	60	...	...	37	...
29	...	1·10	...	...	...	...	...	...	...	78	...	...	...	...	...	...	...	...
30	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...
31	...	17	...	13	...	...	...	...	...	2·25	...	...	...	...	...	...	21	...
TOTAL	...	5·70	...	...	9·20	...	...	7·50	...	...	16·23	...	...	3·27	...	...	3·78	...

## APPENDIX 19—

1849.]

DAYS.	January.			February.			March.			April.			May.			June.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	...	...	...	-20	...	...	-12	...	...	-74	...	...	1-20	...	...	-05	...
2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1-20	...
3	...	...	...	...	-30	...	...	...	...	...	...	...	...	...	...	...	-19	...
4	...	-13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	...	...	...	...	...	...	...	...	...	...	...	...	...	-49	...	...	-14	...
8	...	-35	...	...	...	...	...	...	...	...	...	...	...	...	...	...	-30	...
9	...	...	...	...	...	...	...	-84	...	...	...	...	...	-11	...	...	-38	...
10	...	-4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	...	-20	...	...	-97	...	...	...	...	...	...	...	...	...	...	...	...	...
12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	...	-32	...	...	...	...	...	...	...	...	-42	...	...	-11	...	...	...	...
14	...	...	...	...	...	...	...	...	...	...	...	...	...	-42	...	...	-37	...
15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	-67	...
16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17	...	...	...	...	-60	...	...	1-04	...	...	...	...	...	-5	...	...	1-	...
18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	...	-33	...	...	...	...	...	...	...	...	...	...	...	...	...	...	-15	...
21	...	-52	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
22	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
23	...	...	...	...	...	...	...	2-12	...	...	...	...	...	...	...	...	...	...
24	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
26	...	-87	...	...	-14	...	...	...	...	...	-44	...	...	-22	...	...	1-35	...
27	...	...	...	...	...	...	...	...	...	...	...	...	...	-36	...	...	-95	...
28	...	...	...	...	...	-4	...	...	...	...	...	...	...	...	...	...	...	...
29	...	-57	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	-14	...
31	...	-67	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL	...	4-00	...	...	2-35	...	...	4-12	...	...	1-60	...	...	2-96	...	...	6-94	...

*continued.*

[1849.]

DAYS.	July.			August.			September.			October.			November.			December.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	...	...	...	'07	...	...	'17	...	...	'78	...	...	...	...	'72	...	
2	...	...	...	...	'40	...	...	'17	...	...	'85	...	...	...	...	...	...	...
3	...	...	...	...	...	...	...	'70	...	...	...	...	...	...	...	'7	...	
4	...	...	...	...	1'50	...	...	'70	...	...	...	...	...	...	...	'3	...	
5	...	'12	...	...	...	...	...	...	...	...	...	...	...	...	...	'1	...	
6	...	'10	...	...	...	...	...	...	...	...	'80	...	...	...	...	'26	...	
7	...	...	...	...	...	...	...	'7	...	...	1'75	...	...	...	...	'54	...	
8	...	...	...	...	'23	...	...	'50	...	...	'42	...	...	...	...	'81	...	
9	...	...	...	...	...	...	...	...	...	...	'90	...	...	...	...	'1	...	
10	...	'39	...	...	...	...	...	'75	...	...	'80	...	...	...	...	'5	...	
11	...	...	...	...	...	...	...	'14	...	...	'5	...	...	...	...	...	...	
12	...	'54	...	...	'45	...	...	...	...	...	'2	...	...	...	...	...	...	
13	...	'26	...	...	...	...	...	...	...	...	...	...	...	...	...	'1	...	
14	...	'87	...	...	...	...	...	...	...	...	...	...	...	...	...	'4	...	
15	...	'36	...	...	...	...	...	'78	...	...	...	...	...	...	...	'87	...	
16	...	'11	...	...	'84	...	...	...	...	...	...	...	...	...	...	...	...	
17	...	...	...	...	...	...	...	'33	...	...	'5	...	...	...	...	...	...	
18	...	'14	...	...	...	...	...	'24	...	...	'82	...	...	...	...	...	...	
19	...	...	...	...	...	...	...	...	...	...	1'20	...	...	...	...	...	...	
20	...	...	...	...	...	...	...	...	...	...	'55	...	...	...	...	'25	...	
21	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
22	...	...	...	...	1'40	...	...	...	...	...	...	...	...	...	...	'2	...	
23	...	'87	...	...	...	...	...	...	...	...	...	...	...	...	...	'3	...	
24	...	'18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
25	...	...	...	...	'8	...	...	'12	...	...	...	...	...	...	...	'36	...	
26	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
27	...	'14	...	...	...	...	...	...	...	...	...	...	...	...	...	'2	...	
28	...	'58	...	...	...	...	...	...	...	...	...	...	...	...	...	'4	...	
29	...	...	...	...	...	...	...	'85	...	...	'5	...	...	...	...	'1	...	
30	...	'58	...	...	...	...	...	'60	...	...	...	...	...	...	...	'5	...	
31	...	'56	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
TOTAL	...	5'80	...	...	4'97	...	...	5'25	...	...	7'54	...	...	1'40	...	3'03	...	

## APPENDIX 19—

1850.]

DAYS.	January.			February.			March.			April.			May.			June.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	...	...	...	2·08	...	...	·6	...	...	·8	...	...	...	...	...	·15	...
2	...	...	...	...	·11	...	...	...	...	...	·2	...	...	...	...	...	·5	...
3	...	·49	...	...	...	...	...	...	...	...	...	...	...	...	...	...	·51	...
4	...	·4	...	...	...	...	...	...	...	...	·3	...	...	...	...	...	·28	...
5	...	...	...	...	...	...	...	...	...	...	·8	...	...	...	...	...	...	...
6	...	...	...	...	...	...	...	...	...	...	·2	...	...	...	...	...	·16	...
7	...	·2	...	...	·40	...	...	...	...	...	·2	...	...	...	...	...	·42	...
8	...	·1	...	...	·10	...	...	...	...	...	...	...	...	...	...	...	...	...
9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	·15	...
10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	·45	...
11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	...	·25	...	...	...	...	...	·6	...	...	{ ·30	...	...	...	...	...	{ 2·90	...
14	...	...	...	...	...	...	...	...	...	...	·16	...	...	...	...	...	{ ...	...
15	...	...	...	...	...	...	...	·44	...	...	·6	...	...	...	...	...	{ ·45	...
16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17	...	...	...	...	·4	...	...	...	...	...	...	...	...	...	...	...	...	...
18	...	...	...	...	...	...	...	...	...	...	·5	...	...	...	...	...	...	...
19	...	·16	...	...	...	...	...	...	...	...	3·00	...	...	...	...	...	...	...
20	...	...	...	...	...	...	...	...	...	...	·8	...	...	...	...	...	·6	...
21	...	...	...	...	·30	...	...	...	...	...	...	...	...	...	...	...	·30	...
22	...	...	...	...	·8	...	...	...	...	...	...	...	...	...	...	...	...	...
23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
24	...	...	...	...	·25	...	...	...	...	...	...	...	...	...	...	...	...	...
25	...	...	...	...	{ ...	...	...	...	...	...	·8	...	...	...	...	...	1·25	...
26	...	...	...	...	{ ·14	...	...	...	...	...	·88	...	...	...	...	...	{ ·15	...
27	...	...	...	...	...	...	...	·24	...	...	...	...	...	...	...	...	·80	...
28	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
29	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	·30	...
31	...	·15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>TOTAL</b>	...	1·12	...	...	3·50	...	...	·80	...	...	4·36	...	...	2·72	...	...	7·80	...

*continued.*

[1850.]

DAYS.	July.			August.			September.			October.			November.			December.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	...	...	...	·2	...	...	·9	...	...	...	...	...	...	...	...	2·70	...
2	...	...	...	...	·20	...	...	·27	...	...	...	...	...	...	...	...	2·10	...
3	...	·25	...	...	...	...	...	...	...	...	·11	...	...	...	...	...	·3	...
4	...	·27	...	...	·22	...	...	·2	...	...	3·06	...	...	·13	...	...	·23	...
5	...	...	...	...	·15	...	...	...	...	...	·26	...	...	·16	...	...	...	...
6	...	·7	...	...	·95	...	...	...	...	...	...	...	...	...	...	...	·25	...
7	...	...	...	...	·15	...	...	·9	...	...	·2	...	...	...	...	...	·5	...
8	...	2·75	...	...	...	...	...	·2	...	...	4·35	...	...	·5	...	...	{·7	...
9	...	·28	...	...	·5	...	...	·18	...	...	...	...	...	...	...	...	·11	...
10	...	1·13	...	...	·28	...	...	·14	...	...	·4	...	...	...	...	...	·11	...
11	...	...	...	...	·28	...	...	...	...	...	...	...	...	...	...	...	·11	...
12	...	·10	...	...	...	...	...	·3	...	...	·2	...	...	·17	...	...	...	...
13	...	...	...	...	·2	...	...	·7	...	...	...	...	...	·2	...	...	...	...
14	...	·48	...	...	·10	...	...	·17	...	...	·18	...	...	...	...	...	...	...
15	...	·65	...	...	·22	...	...	·23	...	...	·44	...	...	...	...	...	·9	...
16	...	·4	...	...	·84	...	...	·8	...	...	·16	...	...	...	...	...	·7	...
17	...	·49	...	...	·62	...	...	...	...	...	·10	...	...	·82	...	...	...	...
18	...	·22	...	...	...	...	...	...	...	...	...	...	...	·2	...	...	...	...
19	...	·18	...	...	...	...	...	...	...	...	·41	...	...	...	...	...	·8	...
20	...	...	...	...	...	...	...	...	...	...	...	...	...	·8	...	...	·12	...
21	...	...	...	...	·12	...	...	...	...	...	·15	...	...	·8	...	...	·2	...
22	...	...	...	...	·1	...	...	...	...	...	...	...	...	·50	...	...	...	...
23	...	·6	...	...	...	...	...	...	...	...	...	...	...	1·74	...	...	...	...
24	...	·3	...	...	·2	...	...	·6	...	...	·13	...	...	·4	...	...	...	...
25	...	·11	...	...	...	...	...	·25	...	...	...	...	...	·2	...	...	·10	...
26	...	·36	...	...	...	...	...	...	...	...	·13	...	...	·6	...	...	...	...
27	...	·9	...	...	·73	...	...	·19	...	...	...	...	...	·54	...	...	·15	...
28	...	·35	...	...	·82	...	...	·33	...	...	·5	...	...	3·82	...	...	...	...
29	...	·2	...	...	·11	...	...	·4	...	...	3·00	...	...	1·50	...	...	...	...
30	...	...	...	...	2·40	...	...	·10	...	...	3·20	...	...	·67	...	...	·7	...
31	...	·35	...	...	·97	...	...	...	...	...	·15	...	...	...	...	...	·4	...
TOTAL	...	8·28	...	...	9·28	...	...	2·36	...	...	15·92	...	...	10·97	...	...	6·39	...

## APPENDIX 19—

1851.]

DAYS.	January.			February.			March.			April.			May.			June.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...
2	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...
3	...	8	...	...	...	...	...	...	...	...	...	...	73	...	...	...	...	...
4	...	4	...	...	31	...	...	3	...	...	...	...	...	...	...	...	...	...
5	...	{	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...
6	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	...	...	...	...	{	3	...	3	...	...	24	...	...	...	...	...	...	...
8	...	...	...	...	3	...	4	...	...	...	...	...	...	...	...	...	...	...
9	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10	...	12	...	...	...	...	...	...	...	...	...	...	39	...	...	22	...	...
11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	19	...	...
12	...	...	...	...	50	...	...	13	...	...	90	...	...	...	...	...	36	...
13	...	12	...	...	13	...	57	...	...	...	...	...	...	...	...	...	...	...
14	...	...	...	...	...	...	...	...	...	25	...	...	7	...	...	26	...	...
15	...	7	...	...	12	...	24	...	...	...	...	...	...	...	...	{	...	...
16	...	3	...	...	25	...	4	...	...	...	...	...	82	...	...	73	...	...
17	...	3	...	...	36	...	...	...	...	...	...	...	...	...	...	125	...	...
18	...	...	...	...	9	...	...	...	...	...	...	...	11	...	...	18	...	...
19	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	32	...	...
20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...
21	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23	...	...
22	...	...	...	...	42	...	...	...	...	...	...	...	...	...	...	22	...	...
23	...	...	...	...	4	...	...	...	...	20	...	...	...	...	...	20	...	...
24	...	7	...	...	...	...	...	...	...	...	...	...	22	...	...	4	...	...
25	...	10	...	...	3	...	...	...	...	3	...	...	...	...	...	...	...	...
26	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15	...	...
27	...	3	...	...	...	...	...	...	...	2	...	...	102	...	...	70	...	...
28	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	91	...	...
29	...	5	...	...	...	...	...	...	...	8	...	...	9	...	...	...	...	...
30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
31	...	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL	...	1.05	...	...	2.36	...	1.12	...	...	1.72	...	...	3.45	...	...	6.01	...	...

*continued.*

[1851.]

DAYS.	July.			August.			September.			October.			November.			December.			
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
1	...	...	...	...	...	...	...	'18	...	...	...	...	...	...	...	...	...	...	
2	...	...	...	...	...	...	...	...	...	1·05	...	...	2·02	...	...	41	...	...	
3	...	...	...	...	...	...	...	'15	...	...	'10	...	...	'11	...	...	'24	...	
4	...	...	...	...	...	...	...	...	...	...	{	...	...	'2	...	...	...	...	
5	...	...	...	...	...	...	...	'4	...	...	{	...	...	'31	...	...	...	...	
6	...	'65	...	...	...	...	...	'54	...	...	{	...	...	...	...	...	'32	...	
7	...	'31	...	...	...	...	...	'4	...	...	{	'13	...	...	'8	...	...	'3	...
8	...	...	...	...	'15	...	...	...	...	...	...	...	...	...	...	...	...	...	
9	...	'9	...	...	...	...	...	...	...	...	...	...	...	'3	...	...	'80	...	
10	...	'7	...	...	{	2·69	...	...	...	...	'2	...	...	'18	...	...	'11	...	
11	...	'4	...	...	{	2·69	...	...	...	...	...	...	...	{	...	...	...	...	
12	...	...	...	...	...	...	...	'8	...	...	...	...	...	{	3	...	...	...	
13	...	...	...	...	'94	...	...	2·78	...	...	'48	...	...	'90	...	...	...	...	
14	...	'18	...	...	...	...	...	'77	...	...	1·46	...	...	'83	...	...	...	...	
15	...	'3	...	...	...	...	...	...	...	3·74	...	...	...	...	...	...	'11	...	
16	...	'44	...	...	...	...	...	...	...	...	...	...	...	'10	...	...	'39	...	
17	...	...	...	...	'67	...	...	...	...	...	...	...	...	...	...	...	'27	...	
18	...	'51	...	...	...	...	...	...	...	...	...	...	...	...	...	...	'9	...	
19	...	'9	...	...	'4	...	...	...	...	1·21	...	...	...	...	...	...	'19	...	
20	...	'4	...	...	'54	...	...	{	...	'24	...	...	...	...	...	...	'11	...	
21	...	...	...	...	'24	...	...	{	58	...	{	...	...	'14	...	...	...	...	
22	...	'15	...	...	'4	...	...	1·67	...	...	{	25	...	...	...	...	'28	...	
23	...	'40	...	...	'30	...	...	...	...	{	...	...	...	'11	...	...	...	...	
24	...	...	...	...	1·86	...	...	...	...	{	57	...	...	'5	...	...	...	...	
25	...	'31	...	...	'8	...	...	'26	...	{	...	...	...	'20	...	...	'15	...	
26	...	'18	...	...	'5	...	...	...	...	{	36	...	...	...	...	...	'25	...	
27	...	...	...	...	...	...	...	1·10	...	{	15	...	...	'40	...	...	'16	...	
28	...	'17	...	...	'12	...	...	'15	...	...	...	...	...	...	...	...	'2	...	
29	...	'42	...	...	...	...	...	...	...	...	...	...	...	...	...	...	'9	...	
30	...	'64	...	...	'8	...	...	'4	...	...	...	...	...	'5	...	...	...	...	
31	...	...	...	...	'50	...	...	...	...	...	...	...	...	...	...	...	...	...	
TOTAL	...	4·72	...	...	8·70	...	...	8·38	...	...	8·98	...	...	5·56	...	...	4·02	...	

## APPENDIX 19—

1852.]

DAYS.	January.			February.			March.			April.			May.			June.		
				A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
		A	B	C		A	B	C		A	B	C		A	B	C		A
1	...	...	...	...	3	2	...	...	...	...	...	...	...	17	...	45	14	
2	...	...	...	...	...	...	...	13	...	...	7	...	1	...	...	...	9	
3	...	...	...	...	...	...	5	...	...	...	...	...	...	10	...	12	21	
4	...	...	1	...	35	8	...	16	5	...	...	...	...	11	2	3	6	
5	...	...	22	...	22	34	...	...	5	...	...	...	...	14	...	4	4	
6	...	...	...	...	4	...	13	21	...	...	...	...	...	...	...	7	18	
7	...	...	6	...	...	...	14	...	...	...	4	...	...	...	...	5	28	
8	...	30	6	...	12	18	...	2	9	...	...	...	...	...	...	3	...	
9	...	12	9	...	3	1	...	...	...	...	1	...	...	...	...	18	...	
10	...	...	...	...	32	1	...	8	...	...	...	...	...	...	...	...	...	
11	...	30	8	...	4	6	...	...	...	...	1	...	...	1	...	9	4	
12	...	...	...	...	5	...	48	5	...	...	...	...	...	13	27	...	23	
13	...	27	16	...	18	14	...	36	28	...	1	31	...	3	16	...	...	
14	...	10	8	...	2	...	16	6	...	96	140	...	14	18	...	23	1	
15	...	5	...	...	...	...	...	...	...	1	3	...	...	...	...	...	3	
16	...	24	33	...	...	...	...	...	...	...	...	...	...	...	...	14	4	
17	...	5	10	...	3	...	...	...	...	2	...	...	...	53	...	3	...	
18	...	6	8	...	2	19	...	25	1	...	4	...	5	...	...	9	...	
19	...	2	4	...	20	30	...	...	...	...	...	...	3	...	...	...	...	
20	...	7	6	...	3	...	...	...	...	...	1	...	1	...	...	24	...	
21	...	12	2	...	1	...	...	...	...	...	8	...	14	8	...	2	1	
22	...	...	...	...	8	8	...	...	...	...	4	...	66	21	...	6	...	
23	...	35	15	...	1	...	...	1	...	...	...	...	12	22	...	31	16	
24	...	12	44	...	9	6	...	10	...	...	1	...	...	7	...	...	16	
25	...	19	6	...	...	...	...	10	...	...	10	...	25	88	...	4	8	
26	...	...	...	...	3	1	...	19	6	...	27	1	...	8	18	...	10	13
27	...	7	10	...	1	...	...	4	...	...	...	...	170	97	...	2	2	
28	...	...	4	...	1	...	...	...	...	...	...	...	322	223	...	76	6	
29	...	7	20	...	15	...	...	...	...	...	...	...	...	...	...	...	...	
30	...	10	...	...	...	...	...	2	...	10	14	...	17	...	1	11		
31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
TOTAL	...	2.55	2.43	...	1.88	1.67	...	2.02	1.26	...	1.37	2.30	...	6.64	6.63	...	2.70	2.41

continued.

[1852.]

Days.	July.			August.			September.			October.			November.			December.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	-4	-2	...	...	...	...	...	...	...	-14	...	.04	.51	...	.9	...	
2	...	...	-1	...	...	...	...	...	...	...	...	...	.61	.27	...	.7	...	
3	...	-18	-4	...	...	...	...	...	...	...	-16	...	.15	1.59	...	1.10	.98	
4	...	-36	-25	...	-4	-12	...	...	...	...	-11	...	.35	.81	...	...	.4	
5	...	-22	-1	...	...	-1	...	-32	-34	...	...	.2	...	2.05	.33	...	.21	.9
6	...	-4	-4	...	-11	.6	...	-22	-25	...	...	...	...	.37	...	...	.1	.4
7	...	-10	.69	...	-27	...	...	1.65	.85	...	...	.32	...	1.15	.77	...	.5	.10
8	...	-10	.20	...	...	...	...	-51	.28	...	1.21	1.86	...	3.78	1.56	...	.5	.3
9	...	...	-4	...	-68	.5	...	2	-15	...	2.74	.54	...	.60	.57	...	.6	.4
10	...	...	...	...	...	-1	...	...	.2	...	.13	.29	...	...	...	...	...	
11	...	-1	...	...	1.40	.31	...	...	.2	...	.3	.22	...	...	.2	...	.5	...
12	...	-4	-2	...	3.30	3.10	...	1.20	.30	...	...	.18	...	...	.1	...	2.0	1.24
13	...	-16	-1	...	-02	.26	...	.94	.23	...	...	.27	...	1.76	.72	...	1.04	1.77
14	...	...	.8	...	...	...	...	.1	.9	...	.34	.2	...	...	1.02	...	1.30	...
15	...	...	...	...	.09	.30	...	.1	...	...	...	...	...	...	.11	...	...	.8
16	...	-26	...	...	.07	.17	...	...	...	...	...	.53	...	4.05	2.25	...	...	.5
17	...	...	.8	...	.7	.4	...	...	...	...	...	...	...	...	.91	...	.21	.3
18	...	-4	.21	...	-1	...	...	...	.10	...	...	...	...	.52	.1	...	...	
19	...	.27	.22	...	.8	.5	...	...	.1	...	...	...	...	...	.6	...	.06	.92
20	...	...	.28	...	.2	...	...	...	...	...	...	...	...	2.86	.56	...	...	
21	...	...	.2	...	...	.15	...	...	...	...	...	...	...	...	.1	...	...	.5
22	...	-14	.16	...	...	.8	...	.41	.5	...	...	...	...	...	...	...	...	.24
23	...	.2	.14	...	.29	.17	...	.32	.3	...	...	...	...	...	.1	...	...	
24	...	...	.2	...	.15	.20	...	.9	.6	...	...	...	...	...	...	...	...	.4
25	...	.1	.2	...	.3	1.12	...	...	.7	...	...	...	...	...	...	...	...	.5
26	...	.21	.2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.26
27	...	.1	.8	...	...	...	...	...	...	...	...	...	...	...	.1	...	...	.22
28	...	.14	.5	...	...	...	...	...	.13	...	...	.3	...	...	...	...	...	.29
29	...	...	...	...	.9	.76	...	.26	.1	...	1.31	...	...	...	...	...	...	.35
30	...	.3	...	...	1.09	.58	...	.7	...	...	4.37	...	...	...	...	...	...	.3
31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.5
Total	...	.38	2.71	...	7.81	7.54	...	6.03	2.99	...	10.13	4.69	...	18.29	11.61	...	5.24	7.04

## APPENDIX 19—

1853.]

Days.	January.			February.			March.			April.			May.			June.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	...	.3	...	.27	.20	...	...	...	...	.31	.30	...	...	...	...	...	.11
2	...	.8	.10	...	.16	1.18	...	...	...	...	...	...	...	...	...	...	1.14	.41
3	...	.29	.13	...	.85	.39	...	.18	.16	...	...	...	...	...	...	...	.69	.44
4	...	...	...	...	.3	...	...	...	.5	...	...	...	...	...	...	...	...	.01
5	...	.23	.43	...	...	...	...	.12	...	...	.16	.08	...	...	...	...	...	...
6	...	...	.01	...	...	...	...	.12	.06	...	...	...	...	...	...	...	...	...
7	...	.14	...	...	...	...	...	.4	.17	...	...	...	...	.23	...	...	.2	1.29
8	...	...	.61	...	...	...	...	.26	.10	...	.4	...	...	.45	.93	...	.19	.06
9	...	...	.10	...	.14	1.22	...	.4	.14	...	.9	.08	...	2.23	2.51	...	.5	.23
10	...	...	.23	...	.85	.20	...	.39	.32	...	.6	.03	...	2.28	.89	...	...	...
11	...	...	.36	...	...	.01	...	.32	.11	...	.10	.32	...	...	...	...	...	...
12	...	.26	.45	...	.60	.01	...	.25	.31	...	.26	.44	...	...	.28	...	...	...
13	...	.20	...	...	...	.01	...	.1	...	...	...	.22	...	.21	...	...	...	.09
14	...	...	.07	...	...	...	...	.8	.29	...	1.15	...	3.77	...	...	...	.4	...
15	...	...	...	...	.1	.05	...	.18	.02	...	.5	...	...	.02	...	.8	1.03	...
16	...	...	.22	...	...	.03	...	...	...	...	...	...	...	...	.05	...	...	...
17	...	...	...	...	.2	...	...	.3	...	...	.1	...	...	...	...	...	.11	...
18	...	...	...	...	...	...	...	.8	...	...	.2	...	...	...	...	...	.60	.50
19	...	...	...	...	...	.09	...	.17	.14	...	.4	.14	...	...	...	...	...	...
20	...	...	...	...	...	.01	...	.8	...	...	.14	.03	...	...	.12	...	.3	...
21	...	...	...	...	...	...	...	...	.05	...	.29	.37	...	...	2.31	...	.3	.15
22	...	.5	...	...	...	...	...	.3	.03	...	...	...	...	.75	...	.7	...	
23	...	.2	...	...	...	...	...	.6	...	...	.34	.56	...	...	.27	...	1.20	.85
24	...	...	...	...	...	...	...	.5	.11	...	.13	.02	...	.3	.01	...	...	.06
25	...	...	...	...	...	.28	...	.1	.04	...	.1	...	...	.39	...	...	.14	...
26	...	.6	...	...	.02	...	...	...	...	...	.4	.10	...	...	.06	...	.11	.18
27	...	.6	.49	...	...	.06	...	...	...	...	.3	.06	...	...	...	...	.9	.08
28	...	.12	...	...	.2	.07	...	.12	.11	...	.25	.06	...	.11	.04	...	...	.58
29	...	.28	.10	...	...	...	...	...	...	...	.9	.04	...	...	.03	...	...	.22
30	...	...	.01	...	...	...	...	...	...	...	...	...	...	...	...	...	1.10	.10
31	...	.69	1.00	...	...	...	...	...	.01	...	...	...	...	4.28	...	...	...	...
TOTAL	...	2.48	4.34	...	2.97	3.81	...	2.62	2.22	...	2.46	4.05	...	13.59	8.66	...	5.55	6.53

continued.

[1853.]

DAYS.	July.			August.			September.			October.			November.			December.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	.10	.20	...	.04	.6	.15	.07	.3	...	.10	.82	.64	.29	.20	.35	...	.5	...
2	...	.2	...	.22	.11	.9	.32	.4	...	.11	.1	...	.27	.22	.30	.46	.15	.07
3	...	...	...	2.18	1.64	2.80	.16	...	...	.81	.82	1.95	.10	.20	.12	.05	.55	.06
4	.07	...	...	...	.10	...	.09	...	...	.01	...	...	.03	.5	.21	.07	...	.08
5	...	.10	...	.25	.15	.11	...	.2	...	.01	.8	...	.27	.82	.20	.09	.1	.25
6	.46	.51	...	...	.08	.03	...	...	...	1.58	.10	...	.01	.2	.19	...	...	.01
7	...	...	.34	...	...	.12	.34	.26	.20	.01	.1	...	.10	1.09	.11	...	...	...
8	.32	.14	...	.24	.6	...	...	.1	...	.05	...	.48	.04	.20	.8	...	...	...
9	.07	.12	...	.10	.19	.14	.08	.13	...	.12	.2	.20	1.87	1.83	1.45	...	...	...
10	.27	.12	.22	...	.3	...	...	...	...	.34	.73	...	.34	.31	.93	...	...	...
11	.04	.85	.68	...	.19	...	.11	.12	...	...	...	...	.01	...	...	.05	...	.13
12	.34	...	.12	.48	.8	.25	...	.2	...	.05	.5	...	...	.1	.01	...	...	...
13	.40	.9	.22	.89	.37	.52	.71	.85	.27	...	...	...	.01	...	.01	...	...	.01
14	.02	...	.10	...	...	...	.03	.5	...	1.86	.7	.20	.14	.4	.08	...	...	...
15	...	.5	...	.08	...	...	...	...	...	1.22	.1	.48	.02	...	.41	.05	...	.11
16	...	.5	.39	.13	...	...	.07	...	.28	.83	...	1.70	1.36	.48	3.45	...	...	...
17	.02	.18	.18	...	...	.55	.42	.65	.34	.92	.68	1.40	.99	.20	.7	.28	4.50	.12
18	...	...	.19	.04	.3	.28	4.14	2.37	4.30	.06	.24	...	.05	.5	.15	...	.11	.04
19	.60	.21	.23	.45	.11	.21	.11	.13	.20	.12	...	.11	.57	.10	.05	.02	...	1.24
20	.02	...	...	1.30	1.20	1.06	...	...	...	.18	.8	.50	...	.1	.01	.04	...	.01
21	.10	...	...	.30	1.16	.47	...	...	...	1.20	.80	.43	.02	...	.05	.08	...	.05
22	.03	...	.28	.56	.14	.28	1.73	.5	...	.40	.46	.31	.28	.18	.07	.07	...	.02
23	.09	.11	.19	.17	.10	.85	...	.7	.16	1.21	...	2.54	.45	.36	.02	...	...	...
24	.50	...	...	...	...	...	.16	.48	...	.55	.15	1.12	.05	.1	...	...	...	...
25	.09	.2	.34	...	...	...	...	.5	...	.66	.35	.67	.40	.9	.23	...	...	...
26	.09	.9	.30	.99	.20	.43	.01	.2	...	.18	.85	.11	.04	.45	.11	.08	.64	...
27	.27	.85	.61	...	.40	.28	.19	3.23	...	1.31	...	.82	.24	.33	.12	...	...	.09
28	.10	.22	.28	...	...	...	.47	3.61	.65	.06	...	.52	.03	.1	...	...	...	...
29	.01	.28	.06	.08	.2	...	.11	.1	.25	.03	1.42	.06	.02	...	.04	...	.15	...
30	.06	.2	.08	...	.2	.30	...	.6	...	...	...	...	.05	.1	.01	.15	1.	.15
31	.03	.3	...	1.37	.39	.98	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL	4.20	4.26	4.81	9.82	6.75	9.95	9.35	12.26	6.65	13.98	7.75	13.34	7.55	7.27	8.83	1.49	6.17	2.44

## APPENDIX 19—

1854.]

DAYS.	January.			February.			March.			April.			May.			June.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	.10	...	...	.02	...	...	...	.1	...	.42	.23	.07	...	...	.01	.06	.57	.20
2	.10	...	.02	...	.15	.07	...	...	.03	...	.5	.02	...	...	...	.07	.3	.04
3	.11	...	...	.01	...	...	...	.15	...	.13	.11	.22	...	...	.11	.10	.40	.01
4	.03	...	.27	.03	.1	.06	...	.3	.04	.32	.8	.13	...	...	...	.10	...	.03
5	.04	.3	.01	.54	.4	.73	.07	...	...	...	.13	.04	...	...	...	...	.3	.23
6	...	...	.01	.20	...	.05	.06	.1	.10	...	.1	...	...	...	.03	...	...	...
7	...	...	.01	.04	...	.10	...	...	...	...	.4	...	...	...	.03	...	...	...
8	.40	...	.25	...	...	...	...	...	.04	...	...	...	...	...	...	.40	.35	.86
9	...	...	...	.05	.11	.06	.02	...	.03	...	...	...	...	...	...	...	...	...
10	.04	.16	.13	.01	...	.03	.04	.6	...	...	...	...	...	.06	...	.32	.6	.14
11	...	...	...	.10	...	.03	.19	.32	...	...	...	...	...	...	.02	...	.40	.12
12	...	.28	...	...	...	...	...	...	...	...	...	...	...	...	...	.10	.15	.02
13	.03	...	...	.08	...	.02	.07	.1	.10	...	...	...	...	.30	...	.05	...	.4
14	.03	.40	.07	...	...	...	.18	...	.01	...	.5	...	...	.1	.13	.15	...	...
15	.03	.29	.06	.60	.11	.20	...	.1	...	.08	.25	.01	.03	.17	...	.08	...	...
16	...	...	.07	.32	...	.15	.05	.2	...	...	...	...	...	.29	.14	.03	.33	.2
17	.01	...	...	.22	.1	.03	...	...	...	...	...	...	...	.01	.2	.05	.12	.20
18	.01	...	...	...	.5	...	.18	.8	...	...	...	...	...	.02	...	.01	.20	.6
19	.03	...	...	...	...	...	.03	.7	...	...	...	...	.01	.09	...	.35	...	...
20	.08	...	.19	.02	...	...	.65	.1	.14	...	...	...	...	.04	.8	.07	.08	...
21	...	...	...	...	...	...	.06	...	.34	...	...	...	...	.09	...	.06	.01	...
22	...	...	...	...	...	...	...	...	...	...	...	...	...	.12	...	.23	.20	.27
23	.47	.19	.12	.35	.14	...	...	...	...	...	...	...	...	...	...	.53	.15	.50
24	.18	...	.18	.01	.15	.07	...	...	...	...	...	...	...	...	...	.28	...	.05
25	.09	...	.5	.05	...	.03	.04	...	...	...	...	...	...	...	...	.13	...	...
26	.20	.11	.13	.04	...	.02	...	...	...	...	...	...	...	.13	.07	.11	.20	.05
27	.50	.16	.42	...	.4	.02	.05	...	.03	.12	.7	.09	...	...	...	.18	.68	.25
28	.04	.21	.19	...	.3	.02	...	...	...	.16	...	.23	.04	...	...	.28	.86	.80
29	.02	...	.02	...	...	...	.23	...	.03	...	...	...	...	.04	...	.35	.5	.18
30	...	...	...	...	...	...	.02	.30	.05	...	...	...	...	.06	...	...	...	...
31	...	.2	.04	...	...	...	...	.4	.05	...	...	...	...	.18	...	...	...	...
TOTAL	2.54	1.85	2.24	2.69	.84	1.69	1.94	1.12	.99	1.23	1.02	.82	1.37	1.55	1.25	7.08	5.49	5.19

*continued.*

[1854.]

DAYS.	July.			August.			September.			October.			November.			December.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	...	...	·28	·4	·16	·24	·60	·17	·05	·45	...	·13	2·27	·64	·02	...	·07
2	·50	·40	·88	·87	·14	·23	...	...	...	...	...	·03	...	...	...	·32	·20	·18
3	·87	·63	·88	...	·2	·08	·12	...	·14	·78	·24	·89	...	...	...	·45	1·21	·3
4	1·00	·29	·66	·06	...	...	·30	...	·23	·57	·23	·7	·06	...	·37	1·01	·25	1·10
5	·01	...	...	·96	{ 1·59	·87	...	·4	·05	·67	·95	·9	·24	·67	·8	·15	·15	·12
6	·20	·5	·17	·22	...	·78	...	·3	...	·30	...	...	·08	·28	·16	·08	·7	·08
7	·41	·62	·25	·05	·2	·12	·05	·14	·06	·22	·30	·05	·52	·16	·24	·10	...	·01
8	·04	...	...	...	...	·01	·20	·2	·18	·02	·9	...	·12	...	·94	·65	...	·57
9	...	·5	...	...	...	...	·92	·58	·95	·08	...	·29	·74	1·64	1·11	...	...	·02
10	·06	...	·08	·02	·6	...	·24	·65	·22	...	...	...	1·60	2·50	1·47	...	...	...
11	·16	·8	·06	·05	...	·19	·04	·1	...	·02	...	...	3·78	3·25	1·18	...	...	...
12	...	·19	·05	...	...	...	·04	...	·08	·69	·77	·13	1·15	2·90	2·12	·07	...	·08
13	·37	·15	·19	·05	...	·03	...	·2	·22	·81	1·07	·73	·12	·65	·92	...	...	·04
14	...	...	...	...	·1	...	·13	...	·10	·22	·30	·05	...	·7	·13	·01	...	·06
15	·02	·28	·06	·15	·22	·18	·21	·19	·31	...	...	...	...	...	...	·37	·87	·49
16	·02	·5	·09	...	·1	·07	·05	·1	·02	·10	·9	...	...	...	·04	...	...	·17
17	...	·1	·03	·18	...	...	·23	·23	·17	·05	·11	...	...	...	·02	·13	·12	·14
18	...	·2	·13	...	...	...	...	...	...	·90	·44	·95	...	...	·08	·11	...	·02
19	...	...	·08	...	...	...	·15	...	·35	·19	1·84	1·23	·23	...	...	·11	...	·41
20	...	...	·24	·11	...	·05	·02	·2	...	...	...	...	·12	·20	·08	...	·24	...
21	·65	1·63	...	...	·11	...	·13	·11	·10	·04	·7	·16	·15	·17	·03	·03	...	·01
22	·07	·5	·23	...	...	...	·15	·9	...	...	...	·03	...	...	·05	...	...	...
23	·11	·39	·22	·09	·9	·15	...	·7	...	...	...	...	...	...	·02	...	...	...
24	·86	1·95	·07	·06	...	·07	·06	·18	·05	...	...	...	...	...	...	·15	·4	·22
25	·03	·4	...	·12	...	·18	·50	·18	·13	·01	·17	·06	...	...	...	...	·6	·06
26	·08	...	...	·06	·19	·19	...	...	·01	·60	1·21	·25	·39	...	·56	...	...	...
27	·03	...	·07	...	·68	·03	·21	·44	·31	...	...	·26	...	...	...	...	...	...
28	·13	·44	·25	·20	·15	·94	...	·1	...	·10	...	·01	...	...	...	...	...	·03
29	·03	·7	·05	·02	·40	·15	·36	·4	·06	·40	·21	...	...	...	...	...	...	...
30	·85	·90	·57	·72	·23	...	...	·1	·03	·05	...	·02	...	...	...	·01	...	·02
31	...	...	·08	·10	·16	·02	...	...	...	...	...	·02	...	...	...	·06	...	...
TOTAL	6·42	7·89	4·74	4·37	4·12	4·50	4·35	3·67	3·94	6·87	8·54	5·32	9·43	14·76	10·44	3·83	3·21	3·93

## APPENDIX 19—

1855.]

DAYS.	January.			February.			March.			April.			May.			June.			
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
1	.62	.25	.49	.11	...	.04	.23	.16	.22	.02	...	...	1.75	.70	1.25	.15	.15	.08	
2	1.41	.30	.93	.02	...	.05	...	...	.06	...	...	...	.45	1.66	.20	.04	...	.01	
3	...	...	...	...	.24	.07	...	...	...	...	...	...	3.24	.85	3.20	...	...	...	
4	.05	.4	.02	...	.9	.11	...	...	...	...	...	...	.01	...	.03	.05	...	.01	
5	.55	.71	.15	...	...	...	...	...	.13	.10	...	...	.28	...	.11	.06	...	.01	
6	1.59	.46	.26	.10	.15	.02	.54	...	.18	.02	...	.02	...	...	.01	...	...	.03	
7	...	...	...	.28	...	.03	...	.19	.13	...	...	...	...	...	.02	...	.10	.06	
8	.78	...	1.18	.16	...	...	.08	.79	...	...	...	...	.02	.25	...	...	1.40	.81	.23
9	.46	.57	.33	.12	...	.11	...	.6	...	...	...	...	...	...	...	...	...	.05	
10	.27	.11	.09	.09	.5	.08	.27	...	...	...	...	...	...	.20	.06	...	...	.06	
11	1.20	1.76	.79	...	...	.01	.14	...	.05	.10	...	...	.10	...	.26	.33	.65	.51	
12	...	.12	.01	.58	...	.18	...	...	...	...	...	...	.03	.16	.24	...	...	.02	
13	.54	.11	.22	.35	.8	.90	.25	.31	.03	...	...	...	.03	...	...	...	...	...	
14	.56	.39	.60	.02	...	...	...	...	...	.01	.02	...	...	.28	.16	...	...	...	
15	.05	...	.09	.12	...	.14	...	...	...	...	...	.14	.05	...	...	...	...	...	
16	.03	...	...	.57	...	.12	.01	...	.03	.01	...	...	...	...	.02	.20	.30	.20	
17	...	...	...	...	...	...	...	...	.10	.06	...	.07	.10	...	...	.20	.9	.03	
18	...	...	.02	.38	.20	.18	...	...	...	.05	.2	.04	...	...	...	.44	...	...	
19	...	...	...	...	...	...	...	...	...	.04	...	.17	...	...	...	1.51	...	...	
20	.03	...	.07	...	...	...	...	...	...	...	...	...	...	...	...	1.08	...	.67	
21	.10	.39	.16	...	...	...	.22	...	.03	1.50	.18	.60	...	...	...	.71	.35	1.17	
22	.07	...	.02	...	.8	.04	.05	.5	.04	.35	.20	...	...	...	...	.30	.60	1.18	
23	...	...	...	.53	.18	.19	.06	.6	.14	.01	...	.05	...	.9	...	.30	.90	.46	
24	...	...	...	.53	.28	.18	...	...	...	.17	.14	.67	...	.38	.29	.10	.20	.22	
25	...	...	...	.23	...	.09	...	...	...	.10	...	.21	.05	...	.27	.60	.25	.21	
26	...	...	...	...	...	...	.32	.50	.18	...	...	...	...	...	.02	...	.15	.25	
27	.01	...	...	.02	...	.07	...	...	...	.10	.5	.01	...	...	...	...	.30	.46	
28	...	...	...	...	...	...	...	...	...	.10	.10	...	...	...	...	.42	.63	.89	
29	.06	...	.04	...	...	...	...	...	...	2.20	.90	.79	.06	.20	.04	.40	.21	.42	
30	.12	...	.17	...	...	...	...	...	...	1.72	2.20	1.47	.50	.54	.49	.03	.5	...	
31	.02	...	...	...	...	...	...	...	...	...	...	...	.50	.14	.65	...	...	...	
TOTAL	8.52	5.21	5.64	4.21	1.35	2.61	2.17	2.12	1.37	6.63	3.93	4.20	7.32	5.18	7.32	8.35	5.74	7.23	

continued.

[1855.]

DAYS.	July.			August.			September.			October.			November.			December.			
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
1	...	...	.05	1.00	1.20	.49	.66	.22	.29	.31	.60	.46	...	.09	.03	.34	.60	.59	
2	.24	...	.28	.21	1.01	.34	.76	...	.05	.29	.48	.35	.01	.33	.01	...	...	...	
3	.07	...	.02	.03	.2	.03	.10	.5	.06	.04	...	...	.05	...	...	...	...	...	
4	.44	...	.22	.40	.51	.91	.58	.15	.08	...	...	.01	...	...	...	...	...	...	
5	...	.31	.10	.18	.8	.05	1.02	.32	.33	...	...	1.24	.24	1.31	.04	.64	.17	...	
6	...	.4	.03	.03	.3	.01	.20	1.21	.10	...	...	.08	2.15	.30	...	.56	.64	.37	
7	.10	.11	.13	.40	.13	.12	.45	...	.28	...	...	...	1.22	...	.21	.6	.57	...	
8	.30	...	.02	.16	.10	.23	.45	1.05	.63	...	...	...	.10	...	.33	.05	...	.25	
9	.08	...	.07	.25	.38	.18	...	...	...	...	...	...	...	...	...	...	...	...	
10	.51	.90	.54	.12	.6	.14	.66	.35	.19	...	...	...	...	...	...	...	...	...	
11	3.90	3.00	2.96	.56	1.64	.61	1.07	.73	.47	...	...	...	...	...	.06	.01	...	.03	
12	...	.45	.04	.55	.33	.15	...	...	.06	...	...	...	.40	...	.67	1.84	.86	.56	
13	...	...	.23	...	.5	.04	...	...	.01	.04	...	.16	.07	.28	...	.09	...	.02	
14	.06	.15	.25	...	.3	.02	.30	...	.06	.60	.50	.17	.29	.3	...	...	.9	...	
15	...	4	.30	...	...	.03	.60	.31	.43	.12	.26	.15	.06	.10	.34	.02	...	.24	
16	.12	.20	.09	.02	.3	.06	.92	.69	.58	...	...	1.03	.15	.08	...	...	...	...	
17	.13	.8	...	...	...	...	2.25	2.10	1.37	.10	.10	.05	.10	...	.02	...	...	.02	
18	.60	.20	.49	.50	.22	.40	.33	.5	...	.02	...	.24	...	...	...	...	...	...	
19	.40	.40	.35	.20	.24	.90	...	...	.02	.23	...	.11	...	...	...	.08	...	.43	
20	.50	.30	.57	...	.3	...	.15	.5	...	.08	...	.18	...	...	.02	1.13	.86	.94	
21	...	...	.01	.06	.23	.07	...	...	...	...	...	...	.8	...	.16	...	...	...	
22	.10	...	.12	...	...	...	...	...	...	.02	.20	.5	.02	.27	.4	.88	.05	.10	.26
23	.05	...	.11	.04	...	...	...	...	...	1.95	.60	.80	.15	.81	.11	.26	.5	.20	...
24	.13	.10	...	7.32	3.20	7.78	...	.55	.79	...	...	...	.01	.5	...	.10	...	.03	
25	.09	.44	.66	3.04	2.84	1.50	...	...	.02	.03	.13	...	.11	.10	.06	...	...	...	
26	...	...	.15	.07	...	.21	...	...	...	.04	.73	.28	.55	.81	.22	.25	...	...	
27	.15	...	...	.56	.73	.12	.2	...	.05	.18	.69	.23	.66	.25	.37	...	.5	.02	
28	...	...	...	.21	.6	.05	.08	.01	.7	1.00	1.06	.19	.10	...	.90	.10	.4	...	
29	.25	.10	.16	...	.1	.07	.13	...	.22	.12	.10	.08	.41	.31	.53	...	...	.10	
30	.10	.50	.09	.28	.15	.10	1.25	.50	.78	.02	...	.04	.27	.26	.16	.25	.8	.03	
31	...	.10	.02	.02	...	.09	...	...	...	...	.10	.40	...	...	...	.15	.18	.26	
TOTAL	8.32	7.42	8.06	16.21	13.31	14.70	12.11	8.34	6.99	6.52	5.40	4.00	8.11	5.37	6.26	5.53	4.25	5.09	

## APPENDIX 19—

1856.]

DAYS.	January.			February.			March.			April.			May.			June.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	.10	.31	.07	...	...	...	...	...	...	.20	.12	.02	...	...	...	.10	.11	.15
2	.01	...	.23	.20	.5	.08	.03	...	.05	...	.18	.08	...	...	...	.18	...	.20
3	...	...	...	.01	.2	.05	...	...	.01	.30	.27	.01	...	...	...	...	...	.03
4	.04	.17	...	...	...	...	.42	.32	.14	...	...	...	...	...	...	.26	.31	.60
5	...	.20	.03	.30	.40	.34	.58	.44	.40	...	...	...	...	...	...	3.48	4.20	3.27
6	.01	...	...	.43	.30	.72	...	...	...	...	.18	...	...	...	...	.05	...	...
7	.56	.25	1.38	.01	.10	.04	...	...	...	.03	.2	.05	...	...	...	.01	.14	.2
8	.10	.8	...	.11	.18	.10	.06	.4	...	...	...	...	...	...	...	.03	...	.06
9	...	...	...	.08	.3	.02	...	...	.01	...	...	.01	...	...	...	.02	.08	.7
10	...	...	...	...	...	...	.01	...	...	...	...	...	...	...	...	.46	.2	.09
11	...	...	.02	.12	.7	.16	...	...	...	...	...	...	...	...	...	.20	...	...
12	...	.25	.02	...	.10	...	.16	.35	.19	...	...	...	...	...	...	...	...	...
13	...	...	...	.27	.40	.02	...	...	...	...	...	...	...	...	...	.06	...	.30
14	.10	.10	.10	...	.2	...	...	...	...	...	...	...	...	...	...	.12	...	.44
15	.07	.5	.26	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.02
16	...	.5	...	...	.12	...	...	...	...	...	...	...	...	...	...	...	...	...
17	...	.2	...	.20	...	.05	...	...	...	...	...	...	...	...	...	.02	...	.08
18	...	...	...	.02	...	.06	...	...	...	...	...	...	...	...	...	...	...	.02
19	...	...	...	.35	.25	.08	...	...	...	.10	...	.01	...	...	...	.15	...	.01
20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.28	.9	.25
21	...	...	...	...	...	...	...	...	...	.07	.02	.1	.11	.72	.34	.55	...	...
22	...	...	.03	...	...	...	...	...	...	...	...	...	...	...	...	.76	.39	.61
23	.02	...	...	...	...	...	...	...	...	...	...	.1	...	.80	.41	.77	.01	...
24	...	...	...	...	...	.03	...	...	...	.01	...	...	...	...	...	...	.02	...
25	...	...	...	...	...	...	.02	...	.12	...	...	.02	...	...	...	.01	.3	.03
26	...	...	...	...	.2	...	...	...	...	...	.50	.22	...	...	...	...	.3	...
27	...	...	...	.14	...	.02	...	...	...	.50	...	...	.45	.22	.30	.03	...	...
28	...	...	...	...	...	.08	.02	...	.19	.04	...	...	.37	.41	.33	.05	.14	.06
29	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.13	...	.01
30	...	...	...	...	...	...	...	...	...	...	...	.03	...	.5	.07	...	.10	
31	...	...	...	...	...	...	...	...	.06	...	...	.10	.35	.04	...	...	...	
TOTAL	1.01	1.68	2.14	2.24	2.06	1.85	1.30	1.15	1.24	1.20	1.29	0.53	3.66	2.41	3.16	5.74	4.94	5.68

continued.

[1856.]

DAYS.	July.			August.			September.			October.			November.			December.			
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
1	.02	.50	.05	...	...	.05	.22	.11	.34	...	...	...	...	.2	.06	...	...	.09	
2	.13	.11	.12	.25	...	...	...	...	...	...	...	.02	.03	.18	...	.4	...	.09	
3	.76	.56	.26	...	...	...	.52	.08	.52	.16	...	...	.67	.53	.07	.10	...	.02	
4	.11	.7	.19	.11	...	.19	.50	...	.36	...	...	...	.28	.15	.31	...	.12	.04	
5	...	...	.08	.40	.10	1.97	...	...	...	...	...	.01	1.30	.25	1.19	.06	.16	...	
6	.01	...	.01	.07	.8	.16	...	...	.07	...	...	...	4.65	2.34	1.33	.07	...	.55	
7	...	.12	...	.80	.70	1.20	...	...	...	...	...	.49	.22	.3	.26	1.18	.73	.84	
8	.08	...	.09	1.72	1.30	1.52	.70	...	.45	.26	.8	.11	...	...	...	1.34	.75	.78	
9	.05	1.05	.01	1.07	.88	.62	.32	.73	.39	.16	.4	.06	...	...	...	...	...	.01	
10	.08	.10	.11	.35	.17	1.28	.12	.18	.33	...	...	...	.06	...	.4	.37	.27	.10	
11	...	.28	...	...	...	...	.10	.13	.10	...	...	...	1.41	2.23	.10	...	...	...	
12	.05	...	.14	.48	.58	.15	...	...	...	...	...	.3	.02	.40	.2	.29	...	...	
13	.03	...	.10	.65	.77	1.83	.36	.72	.50	.20	...	...	.27	.29	.04	.07	.34	.53	
14	...	...	.01	...	...	...	.34	.25	.62	.22	.25	.10	.03	.2	.01	.26	...	...	
15	...	...	...	.01	.5	...	.03	...	.07	.15	...	.01	.01	...	...	...	.5	.26	
16	.08	...	...	.09	...	.05	.16	...	.43	1.06	.22	.37	...	...	...	...	...	...	
17	.05	.10	...	.24	...	.13	.56	.22	.11	.20	.9	...	.63	...	.01	.02	.1	...	
18	.38	.28	.35	...	...	.02	...	...	...	...	.32	.40	.10	.35	...	...	...	.02	
19	...	...	...	...	...	...	.04	...	...	...	...	...	...	...	.04	...	...	.01	
20	.25	.18	.25	...	...	...	.03	...	...	...	.7	...	.16	.13	.05	.27	.5	.10	
21	.05	.5	...	.14	.4	.12	...	...	...	...	...	...	...	.12	.02	.03	.16	.45	.03
22	...	...	...	.06	.7	...	1.33	.80	.20	.10	.6	...	.10	.36	...	...	...	.03	
23	.14	.20	.17	...	2.55	...	.11	.25	...	.03	...	.01	.22	.3	.08	...	...	...	
24	...	.1	.02	...	.33	...	.04	.27	...	...	...	...	.08	...	.04	...	...	...	
25	.28	.32	...	1.07	.45	...	.12	...	.40	3.50	.96	.277	...	...	...	...	...	.02	
26	...	.5	...	.35	...	.03	...	...	.24	.21	.2	.01	.26	...	.04	...	.02	.03	
27	.07	.40	.05	...	.10	.10	...	...	...	...	...	...	.02	...	.06	.15	.5	.13	
28	...	...	...	...	...	...	...	.6	.03	...	...	.01	.06	.7	.12	...	...	...	
29	.17	.65	.04	...	...	...	...	.11	...	.10	.70	.2	1.43	.10	...	.14	.4	.17	
30	...	...	.03	.11	...	...	...	.22	...	.04	.76	.74	.58	.20	1.12	.16	1.15	1.01	.29
31	...	...	...	.09	...	...	...	...	...	.10	.14	.9	...	...	...	.13	.36	.01	
TOTAL	2.79	5.03	2.08	8.06	8.17	8.42	5.93	4.80	5.30	7.81	3.04	6.49	11.38	8.14	5.33	5.51	4.41	4.15	

## APPENDIX 19—

1857.]

DAYS.	January.			February.			March.			April.			May.			June.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	.26	.9	.02	.05	...	...	...	...	...	...	...	...	.01	...	...	.20	.9	...
2	...	...	.20	.02	.7	.05	...	...	...	.07	...	.04	.85	.275	.43	...	...	...
3	.30	.2	.07	.12	.3	.23	...	...	...	...	...	...	.08	.5	.02	.28	.5	.08
4	...	...	...	...	...	.02	.62	.26	.13	.03	.16	.78	.39	.8	.01	...	.17	.24
5	...	...	.15	.04	...	.01	.48	.5	.17	...	...	.04	...	.38	.12	...	.10	.25
6	...	...	...	.45	.37	.60	.64	.29	.23	.15	.380	.01	.38	.335	...	...	...	...
7	.07	...	.01	.11	.12	.11	.26	...	.31	.30	.2	...	...	...	...	...	.12	.11
8	.09	...	.13	.06	.3	.05	...	.9	.02	.12	.46	.16	.08	...	.05	.23	...	.02
9	...	...	...	.20	.19	.28	...	...	...	...	...	...	...	.20	.05	...	.3	.04
10	...	...	.11	1.12	.88	.96	...	...	...	...	...	...	...	...	.25	...	.42	.17
11	...	...	...	.32	.10	.16	.04	...	.03	.12	.6	...	.15	...	.04	.225	1.42	1.98
12	.23	...	.04	1.11	.50	.27	.75	.68	.26	.16	...	...	...	...	...	.02	.17	.01
13	.02	...	...	.19	.1	.03	.06	.7	.10	.10	...	.10	...	...	.01	...	.28	.03
14	...	...	.03	...	...	...	...	.38	...	...	...	.14	...	...	.09	.21	.52	.08
15	.13	.15	...	.01	...	.07	.34	.26	.19	...	...	.04	.20	.21	.05	...	.6	.14
16	.04	...	.06	...	.20	...	...	.11	.09	...	...	.02	...	.15	...	...	...	...
17	.16	.10	.32	.12	...	...	...	...	...	...	.03	...	...	.01	...	.10	...	...
18	.08	.10	.02	.02	...	...	...	...	...	...	...	...	...	...	...	...	...	.11
19	...	.4	...	.07	.72	.16	...	...	...	...	...	.12	...	...	...	...	...	...
20	.07	.6	.04	...	1.51	.08	...	...	...	...	...	...	...	...	...	.28	...	.04
21	.20	.11	.22	.05	.3	.03	...	...	.03	.09	.10	.22	...	...	...	...	...	.04
22	.20	.14	.13	1.22	.22	.82	...	...	.01	...	...	...	...	...	...	...	.10	...
23	.26	.70	.25	...	.17	.04	.05	.33	.07	...	...	...	.75	.31	.31	.02	.6	...
24	.04	...	.04	.25	.34	.07	.04	...	.05	...	...	...	...	...	.04	...	.45	.19
25	...	...	.13	...	...	.05	...	...	...	...	...	.01	...	...	.50	.66	.12	
26	.28	.11	.06	...	...	.07	...	...	...	...	...	...	...	.10	...	.85	.03	
27	.04	...	...	.40	.2	.06	...	...	...	...	...	.01	...	...	1.11	.23	.15	
28	...	...	...	.18	...	.14	.02	...	...	...	...	...	...	...	...	...	.81	
29	.06	...	...	...	...	...	...	...	...	...	...	.27	.04	...	.5	...	.21	.45
30	.17	.10	.17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.18
31	.40	.12	.22	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL	3.10	1.84	2.42	6.11	5.51	4.31	3.30	2.52	1.69	1.14	4.87	1.61	3.04	7.48	1.63	5.40	6.09	5.27

continued.

[1857.]

DAYS.	July.			August.			September.			October.			November.			December.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	...	...	-02	-14	-02	2-20	1-80	1-01	...	...	-02	.52	.55	.02	-14	-10	.36
2	...	...	.04	.85	-28	.31	.10	...	.11	.05	...	.03	.74	.93	.01	...	...	...
3	...	.30	.01	.10	...	.03	...	.6	.15	.11	.7	.16	.17	.1	.64	...	...	.14
4	.38	.68	.15	...	.24	.02	.43	1-00	.41	...	.28	.01	...	...	...	...	...	...
5	...	...	...	.25	.58	.11	1-50	.41	.73	...	...	...	...	...	.02	...	...	...
6	.10	...	.04	.75	4-60	.90	.29	.28	.10	...	...	...	2-04	...	.16	.26	...	.40
7	...	.7	...	.25	...	.02	.08	.4	.05	...	...	...	...	...	.37	...	.45	...
8	...	...	...	.11	.12	.11	.70	.22	.67	...	...	...	...	...	...	...	...	.31
9	...	...	.02	...	.20	...	.31	.67	.02	...	...	...	.88	1-00	.97	...	.31	.11
10	.43	...	...	.10	.30	.28	.20	...	.10	...	...	...	.21	.6	.14	.34	.3	.03
11	.20	.6	.07	.09	.70	.03	.12	.8	...	...	...	...	...	...	.17	.46	.16	.26
12	...	.90	...	.16	.25	.34	...	...	...	...	...	...	.70	1-35	.04	...	...	...
13	...	...	...	.15	.18	.03	.03	...	...	...	.1	.13	.24	.28	.21	.31	.10	.03
14	...	...	.01	...	...	...	...	...	...	.23	.1	.33	1-74	1-29	.43	...	.7	.12
15	...	...	...	...	...	...	...	.2	.15	...	1-21	2-20	1-02	.15	1-08	.64	.25	.44
16	...	.11	.09	...	.35	.12	.76	.82	.80	.34	.8	.02	.58	...	.02	.08	...	.01
17	1-27	1-08	1-05	.38	...	.20	.80	1-42	.29	.93	.8	.03	.33	.95	.12	.20	.1	.07
18	...	.5	.03	...	.5	...	.35	.16	.28	.50	.48	.51	...	...	...	...	...	...
19	...	.41	.49	...	...	...	...	...	.02	...	.7	...	...	.06	.06	...	...	...
20	2-00	1-42	1-68	...	...	...	.28	...	.01	...	...	.05	.13	.9	.08	...	...	...
21	.25	.47	.53	...	...	...	...	.40	.04	.08	.19	.04	.20	...	.81	.13	...	.08
22	...	...	...	...	.31	...	.12	.20	...	...	...	.02	.85	1-06	.56	...	...	...
23	...	.22	.20	.28	.13	.05	.12	.58	.02	.33	.40	.53	...	...	.02	...	...	.07
24	...	...	.10	.60	.51	.17	.53	.7	.59	.23	...	.30	.12	...	...	...	...	.05
25	...	...	...	...	.3	...	...	.10	.26	.11	...	.77	.16	...	.15	...	.5	...
26	...	...	.04	.22	.2	.10	.66	.30	.15	...	...	.52	.30	.28	...	...	...	...
27	...	...	...	...	.75	...	...	...	.05	.44	...	.11	.16	...	.19	.05	.7	.06
28	...	.16	.15	.50	.56	.34	.08	...	...	.22	.17	.23	.66	...	.25	.10	.20	...
29	.85	.52	.24	.15	.6	.13	.23	.18	.23	1-38	1-78	1-62	...	...	...	.26	.50	.07
30	2-10	1-20	...	.42	.17	.33	...	.20	.16	.25	.8	.06	1-22	1-86	.81	...	.8	.19
31	...	...	.97	.34	1-14	.11	...	...	...	.35	.8	.02	...	...	...	.28	.22	.17
<b>TOTAL</b>	<b>7-58</b>	<b>7-65</b>	<b>5-91</b>	<b>5-72</b>	<b>11-67</b>	<b>3-75</b>	<b>9-89</b>	<b>9-01</b>	<b>6-40</b>	<b>5-55</b>	<b>4-99</b>	<b>7-19</b>	<b>13-19</b>	<b>10-17</b>	<b>7-24</b>	<b>3-62</b>	<b>2-15</b>	<b>3-42</b>

## APPENDIX 19—

1858.]

DAYS.	January.			February.			March.			April.			May.			June.			
				A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
		A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	...	·01	·07	...	·01	...	...	·22	...	...	·10	·01	...	·03	...	...	...	
2	...	·15	·02	...	·14	·06	...	...	·02	·11	...	...	...	...	·08	...	...	...	
3	...	·3	·02	·20	·40	·02	...	...	·25	...	...	·02	·28	·79	·02	...	...	·13	
4	·20	...	·08	·22	·60	·01	...	...	·03	·05	...	...	...	...	·16	...	...	...	
5	·01	·10	...	·02	·10	·40	...	...	...	·10	...	...	·17	·2	·01	...	...	·05	
6	·14	·15	·16	·09	·4	·07	...	...	...	...	·8	...	...	...	·02	·30	·31	·10	
7	·26	·25	...	...	...	...	...	...	·8	...	·55	...	...	...	...	·07	...	·5	·4
8	...	·10	·16	·01	...	...	...	...	...	...	·10	...	...	·07	·7	...	·25	·34	·1
9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	·40	...	·60	
10	·26	·1	·17	·05	...	·18	...	...	...	...	...	...	·02	...	...	...	·28	·9	·4
11	·18	·2	...	...	·1	...	...	...	·01	·16	...	·19	...	·2	·03	...	·23	...	
12	...	...	·01	...	...	·03	...	·10	...	...	...	...	...	·5	·01	·70	·01	·73	
13	...	·8	...	·01	...	...	·10	...	·08	...	...	...	...	...	...	·46	·10	·27	
14	...	...	·03	·06	...	...	·09	·30	·55	...	...	...	...	·3	...	·03	...	·01	
15	·05	...	...	...	...	·02	...	...	·01	·03	...	·01	...	...	·08	·26	...	·27	
16	...	·21	...	...	...	·01	...	...	...	...	...	...	...	·5	...	...	...	...	
17	·20	...	·05	...	...	...	...	...	·01	·05	...	·23	·10	...	·25	·21	·9	·10	
18	·06	·9	...	·76	·1·60	·34	·04	·2	·01	·25	...	·06	·20	...	·06	·05	...	·12	
19	...	...	...	...	...	...	...	...	...	·14	...	·07	·31	·14	·03	...	...	...	
20	...	...	...	...	...	...	...	...	...	...	...	...	·1·08	·6	·94	·06	·15	·02	
21	·15	·2	·05	...	...	...	...	...	...	·04	...	·02	...	·13	...	...	...	...	
22	...	...	...	·01	...	...	·10	·25	·60	...	...	·03	...	...	...	...	...	...	
23	...	...	...	...	...	...	...	...	·04	...	...	...	·08	...	...	...	...	...	
24	...	...	...	...	...	...	·13	...	·01	...	...	...	...	...	...	·03	...	·4	
25	...	...	...	·01	...	...	...	...	...	·06	...	...	·01	·5	...	·1·27	...	·72	
26	...	·5	·69	·01	...	...	·12	...	...	·08	...	...	...	...	...	...	...	·22	
27	·16	·2	...	...	...	...	·12	...	...	...	·26	...	·18	...	·2	·4	...	...	
28	...	...	...	...	...	·02	...	...	...	...	·02	...	·03	·15	·23	·35	·32	...	
29	...	...	...	...	...	...	...	...	...	...	...	...	·13	·11	·12	...	·3	·18	
30	...	...	·09	...	...	...	...	...	...	...	...	...	...	...	·03	...	...	...	
31	...	...	...	...	...	...	...	...	...	...	...	...	·05	·17	...	...	...	...	
TOTAL	1·67	1·28	1·54	1·52	2·89	1·29	·58	·75	1·92	1·82	·18	·96	2·64	1·94	2·33	6·62	2·62	4·43	

*continued.*

[1858.]

DAYS.	July.			August.			September.			October.			November.			December.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	...	...	...	...	...	...	·54	·11	·09	...	·20	1·87	1·21	·64	·16	...	...
2	·82	·20	·62	·01	...	·01	·48	·10	·20	...	·4	...	·23	1·00	·02	·02	·1	...
3	·11	·18	·01	·08	...	·10	·05	...	·2	...	...	...	...	·18	·10	·03	...	·15
4	...	...	...	...	...	·5	1·16	·40	·50	·01	·13	·55	...	...	...	·41	...	·25
5	·06	·65	·15	...	...	·6	...	...	...	...	·4	·6	...	...	...	·08	...	·14
6	·09	·20	·15	·27	·5	·9	...	...	...	·50	1·57	1·75	...	·58	·20	·41	...	·26
7	·04	...	·03	·07	·14	·9	...	...	...	·40	·70	·59	·34	·40	·47	·45	·78	·17
8	·20	·35	...	...	...	·15	·10	...	·9	·12	·30	·14	...	...	·01	·75	·7	·30
9	·19	·30	·17	·04	·31	·20	·14	...	·04	·80	·40	·01	·07	...	·04	·24	·54	·14
10	·02	...	...	·22	...	·8	·03	·1	·62	·22	·35	·9	·27	·12	·10	...	...	...
11	·15	·22	·13	·28	·13	·01	...	·36	...	·80	·42	·69	·07	·3	·12	...	·2	...
12	·04	·23	·13	...	·16	·3	·01	...	...	·05	·10	·6	·21	·11	·15	·29	·6	·36
13	·07	·30	...	·43	·47	·34	·90	1·00	·11	...	·16	·29	·11	...	·04	·06	·16	·05
14	1·32	·33	·15	·46	·7	·4	·04	·25	·13	·47	1·30	·31	...	·1	...	·01	·8	...
15	·36	·15	·14	...	·25	·4	...	...	...	·30	·51	·37	...	...	...	·28	·28	·33
16	·11	·10	·10	·14	...	·2	...	...	...	1·33	...	...	·28	·10	·14	...	...	·03
17	·03	...	·01	...	...	·5	...	...	...	·72	...	...	·48	·10	·22	·22	·11	·09
18	·24	·8	·23	...	...	...	·10	·2	...	...	...	...	...	·10	·02	2·23	·36	1·39
19	·01	...	...	...	·4	·15	...	...	...	...	...	...	·12	·7	·04	·53	·5	·08
20	·26	·28	·12	·01	...	·26	·02	...	...	...	...	...	·07	·19	...	·58	·52	·16
21	·04	·3	·29	·72	·90	·63	·24	...	·12	...	...	...	...	...	...	...	...	·06
22	·15	...	·7	·04	...	·5	·06	...	·14	...	...	...	...	...	...	...	...	...
23	·46	·29	·7	·03	...	·11	...	·10	·15	...	...	...	...	...	·07	·25	...	·10
24	·09	·8	·26	·54	·4	·22	·20	·46	...	·05	...	·04	·14	...	·23	·16	·10	·04
25	·16	...	·1	·39	·17	·46	·13	·18	·17	·01	...	·13	...	...	·09	·06	...	·06
26	...	...	...	·15	...	·8	·10	·79	...	...	...	·05	·26	·30	1·90	...	...	·20
27	...	...	...	...	...	·10	·34	·16	·15	1·93	·77	1·51	1·90	1·30	·30	·16	·12	·15
28	...	...	...	·15	·17	·6	·44	·21	·3	1·10	·52	1·16	·05	...	·47	...	...	...
29	·62	·55	·23	·13	...	·24	...	...	...	1·06	1·00	1·20	·10	...	·12	·28	·65	·43
30	·06	·40	·12	·09	·40	...	...	·12	...	·12	·4	·19	·20	...	...	·10	·13	·26
31	...	...	...	·06	...	·22	...	...	...	1·75	·72	1·38	...	...	...	·20	·1	...
TOTAL	5·70	4·92	3·19	4·31	3·30	3·94	4·54	4·70	2·58	11·83	9·07	10·77	6·77	5·80	5·59	7·96	4·05	5·30

## APPENDIX 19—

1859.]

DAYS.	January.			February.			March.			April.			May.			June.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	.02	.4	...	.13	.2	.5	...	...	...	.01	...	...	.04	...	...	...	...	...
2	...	.3	...	.30	.25	.07	...	...	...	.04	...	.04	...	...	.03	...	.3	.07
3	.02	...	...	.05	.3	.03	...	...	...	...	...	...	...	.3	.06	...	...	...
4	...	.4	...	.16	.10	.20	.02	...	...	...	...	...	.01	...	...	.05	.6	...
5	.04	.3	.09	...	.1	...	.04	...	...	...	...	...	...	...	.02	.01	...	.02
6	.04	.7	.11	.03	...	...	.06	.3	.45	...	...	...	.01	...	.40	.15	.12	...
7	.04	.2	...	.08	.5	...	...	...	...	.13	...	...	...	...	.21	.15	.06	...
8	...	...	...	...	.1	.31	.03	...	.09	...	...	...	...	...	...	...	...	...
9	...	...	...	.11	.27	.35	...	...	...	.02	...	.01	...	...	...	...	.12	.06
10	...	...	...	.03	...	...	.13	...	.10	.02	.7	.31	...	...	...	...	...	...
11	...	...	...	.01	.14	...	.07	...	...	.05	.16	.12	...	...	...	...	.200	.24
12	...	...	...	...	.5	...	.01	...	...	.02	...	.42	.05	...	...	.02	...	.17
13	.07	...	.06	...	...	...	.12	...	.47	.04	.2	...	...	...	.05	...	...	...
14	.06	.23	...	...	.1	...	...	.6	...	...	...	...	.02	...	.13	.16	...	.06
15	.03	.4	...	...	...	...	.13	...	...	.04	.11	...	.07	.10	.07	...	...	.02
16	...	...	.06	.02	.5	.05	.03	...	...	...	...	...	...	.1	...	.08	.30	.09
17	.02	...	...	...	...	.01	...	.3	...	...	...	...	.01	...	.15	.12	.45	.14
18	.04	.3	.03	.05	.7	.19	...	...	...	...	...	...	...	...	.08	.02	.9	.03
19	.13	.3	.22	.08	.15	...	.08	.7	.13	...	...	...	...	...	.09	.01	...	...
20	.03	.6	...	...	.5	.02	...	...	...	...	...	...	...	.23	.79	.02	...	.14
21	.27	.5	.31	...	...	...	.08	...	...	...	...	.04	.38	.20	.15	.32	.12	.27
22	.04	.17	...	...	...	.01	.09	.31	.06	.02	...	...	.16	.6	.01	.38	.53	.39
23	...	...	.02	...	...	...	...	...	...	...	...	...	...	...	.01	.72	.36	.27
24	.97	.20	.69	...	...	...	...	...	...	.04	...	...	...	...	...	.48	.20	.10
25	.01	...	...	...	...	...	...	...	...	...	.30	.07	.31	.15	.59	.10	.33	...
26	.05	...	...	.02	...	.02	...	...	...	.27	.1	.90	.12	.33	.02	...	.15	.16
27	.03	.18	...	1.03	...	.69	...	...	...	...	...	.03	.41	.53	.44	1.40	.54	.03
28	.42	.9	.30	.87	.68	.8	...	...	.03	...	.3	...	.11	.28	.06	.03	.4	.04
29	.26	...	.13	...	...	...	.12	...	.24	...	...	...	.60	.6	1.28	...	.1	.18
30	...	...	.10	...	...	...	.03	...	...	...	...	...	.95	.65	.56	1.85	.68	...
31	...	...	...	...	...	...	...	...	.01	...	...	...	...	.20	...	...	...	...
TOTAL	2.59	1.21	2.12	2.97	1.94	2.38	1.04	.50	1.62	.66	.70	1.94	3.25	2.83	4.54	6.43	4.31	4.96

continued.

[1859.]

DAYS.	July.			August.			September.			October.			November.			December.			
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
1	.02	.3	.01	.08	...	...	.02	.6	.10	.02	.30	.02	.02	.4	.08	...	...	...	
2	...	...	...	.17	.65	.07	...	...	.06	.72	...	.49	.02	.60	.03	...	...	...	
3	...	.2	...	.87	.7	.33	.10	...	.02	.02	...	...	.98	.48	1.79	.01	...	...	
4	...	...	...	.22	.43	.25	.16	.67	.48	.32	.10	.80	.84	1.54	1.15	.03	.7	.02	
5	.03	...	...	...	...	...	...	...	.1	...	.07	...	.18	1.44	1.40	1.48	.70	.44	1.43
6	.10	...	.20	...	...	...	...	...	.02	.30	.64	.20	3.10	...	3.55	.80	.21	.44	
7	.28	.23	.19	.05	...	...	.10	...	.18	.19	.20	.41	...	...	.64	.97	.33		
8	...	.15	.01	...	2.19	...	...	...	.05	.02	.8	.02	.06	.14	.17	.08	...	.06	
9	...	.5	...	...	...	...	.02	.50	...	...	.12	...	.01	.2	.02	.09	...	.05	
10	.02	...	...	...	...	...	.03	...	...	.67	.31	.36	.02	...	.10	.11	...	.04	
11	...	...	...	...	...	...	...	.10	.02	.04	.8	.45	...	...	...	.8	.03		
12	.33	.31	1.03	.03	...	.05	.01	...	...	3.10	.14	1.13	...	...	...	...	...	...	
13	.05	.8	...	.13	...	.36	.03	.2	...	.64	.22	.54	.75	.51	.45	...	...	...	
14	.25	.28	.35	...	...	.66	.16	.18	.10	.18	1.34	.70	1.38	.36	.79	...	...	...	
15	...	...	...	...	...	.01	.46	.40	.02	...	.5	...	.40	.8	.23	.22	.8	.05	
16	...	...	...	.01	.6	.01	.33	.20	...	.10	.4	.47	...	.30	.02	...	...	.01	
17	...	...	...	.06	...	.29	1.00	.18	.04	.52	...	.96	.17	.9	.08	...	...	...	
18	.17	.24	.12	.26	...	.45	.02	.20	.21	.94	2.02	1.10	...	.6	.09	...	...	...	
19	.08	...	.02	...	...	.02	...	...	...	.78	...	.03	.13	...	.22	.04	...	.02	
20	.68	.22	.25	...	...	...	.05	.5	.10	.27	...	.10	...	...	.13	...	...	...	
21	.68	.5	.41	.20	.26	.30	.03	.18	...	...	.8	.06	...	.11	...	...	...	...	
22	.51	.38	.31	.03	...	.30	.14	...	...	.61	...	.05	...	...	.01	...	...	...	
23	.76	1.35	.68	.05	...	.01	.04	...	.28	...	...	.09	.81	.10	.31	...	...	.12	
24	.04	.7	.13	...	...	.01	...	1.00	...	.04	...	.20	.07	...	.03	...	...	.02	
25	2.	.94	1.66	...	...	.02	.06	.18	.04	.26	.4	.27	.11	.7	.02	...	...	...	
26	.04	.2	.01	.05	...	...	.16	...	...	.63	.54	.71	.52	.10	.38	...	...	...	
27	...	...	.04	...	.24	.05	.39	...	1.66	.24	.37	.04	.28	.4	.08	.50	.18	.01	
28	.43	.7	...	...	...	...	.62	.3	.67	.16	.22	.24	...	.8	.17	...	...	.27	
29	.04	...	...	...	...	...	1.13	1.00	.55	.05	.4	...	...	.10	.05	.01	.16	.09	
30	.02	...	...	.05	...	...	...	...	...	.10	.1	...	.25	...	...	.02	.13	...	
31	...	.8	.01	...	...	.02	...	...	...	.29	.8	.20	...	...	.04	.41	.04	...	
TOTAL	6.53	4.57	5.43	2.26	3.90	3.21	5.06	4.96	4.60	11.28	7.02	9.82	11.36	6.22	11.43	3.29	2.73	3.03	

## APPENDIX 19—

1860.]

DAYS.	January.			February.			March.			April.			May.			June.			
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
1	.2	.5	.04	.1	.18	.11	.73	.15	.69	...	...	.14	...	...	...	.4	...	.05	
2	...	...	.01	.25	.17	.25	...	...	...	...	...	...	.15	...	.01	...	...	...	
3	.20	.26	.17	.1	.5	...	.7	.11	.21	.20	...	...	.01	.3	...	...	.38	...	.01
4	.3	.3	.06	.38	.21	.08	.1	...	.01	.36	...	.06	...	...	...	...	.16	.04	
5	...	...	...	.11	.16	...	...	...	...	.17	...	.02	...	...	...	...	...	...	
6	...	...	.10	.17	.5	.28	...	...	.02	.7	.14	...	.40	...	.03	...	...	...	
7	...	.4	.21	...	.4	.02	...	...	...	...	.6	.16	...	...	...	.11	.19	.12	
8	...	...	.02	.20	.20	.05	...	...	...	...	...	.02	.12	.9	.11	...	...	.48	
9	...	.3	...	...	...	...	...	...	...	.12	...	...	...	...	...	.30	.5	.34	
10	.35	.26	.37	...	...	...	...	...	...	...	...	.66	...	...	...	...	...	.06	
11	.83	.25	.20	.13	...	.01	...	...	...	.15	.11	.21	...	.27	...	...	...	.03	
12	.25	.26	.08	...	.4	.02	...	...	...	.30	.9	.03	...	...	...	.80	.23	.07	
13	.15	...	.44	...	...	...	...	...	...	.13	...	...	...	.1	...	.19	.9	.27	
14	.5	.3	...	...	...	...	.10	...	.07	...	...	...	.2	...	...	...	...	.03	
15	.10	.7	.10	.35	.7	.23	.1	.1	...	...	...	...	...	...	...	.15	.7	.06	
16	.6	.1	.05	.3	...	...	...	...	...	.8	...	...	...	...	...	...	.4	...	
17	...	.15	...	...	.4	...	...	...	.03	.34	.7	.12	...	...	...	.20	.38	.08	
18	.44	.3	.24	...	...	.02	...	.4	...	...	...	.01	...	...	...	.30	.63	.31	
19	...	...	...	.5	.12	...	.2	...	...	.6	.2	.24	...	...	...	...	.7	.13	
20	.2	...	...	...	.2	...	.4	...	...	...	...	...	...	...	...	...	.2	...	
21	.3	...	.04	.30	.30	.18	...	...	...	...	...	.10	...	...	...	...	...	...	
22	.12	...	...	.30	.28	.23	...	...	...	...	...	...	...	...	...	...	...	...	
23	...	.11	.03	.5	.1	...	...	...	...	...	...	...	.10	...	...	...	...	...	
24	...	...	...	.5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
25	.3	...	...	.5	...	...	.10	...	...	.20	.20	.01	...	...	...	...	...	.08	
26	.35	...	.03	.1	.15	...	...	...	.04	...	...	...	...	...	...	...	...	.03	
27	.2	...	.08	.1	.8	...	...	...	...	.3	.5	...	...	...	...	...	...	...	
28	...	...	...	.23	.10	.21	...	...	...	...	.13	.22	...	...	...	...	...	.01	
29	...	...	...	1.36	.70	.85	...	...	...	.62	.11	1.07	...	...	...	1.36	1.05	.91	
30	...	...	...	...	...	...	...	...	.06	...	...	.03	...	...	...	...	.1	.01	
31	.1	...	...	...	...	...	...	...	...	...	...	...	...	.37	...	...	...	...	
TOTAL	3.06	1.48	2.27	4.05	2.97	2.54	1.08	.31	1.25	2.71	.98	3.14	.82	.74	.15	4.03	2.99	3.12	

continued.

[1860.]

DAYS.	July.			August.			September.			October.			November.			December.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	...	.03	...	...	.03	...	.9	.07	...	.5	.10	.15	.6	.12	...	...	...
2	...	...	.11	.61	1.05	.42	.90	5.95	.59	.8	.7	.17	2.35	1.58	1.19	.1	...	...
3	...	.10	.08	.23	...	.07	.2	.1	...	.18	.1	.41	.34	.19	.70	.5	.2	...
4	.20	.4	...	.2	.20	...	.36	.23	.07	.6	.2	.02	.44	...	...	.97	1.34	1.57
5	...	...	...	.2	.39	.04	...	...	...	.28	1.96	2.78	.26	.75	.10	.1	...	...
6	...	...	.02	1.78	.43	.90	.10	.2	.05	2.12	.10	.25	...	...	...	...	.01	...
7	...	.21	...	1.09	.72	.80	.56	.61	.60	.18	.6	.82	...	...	...	.20	.35	.51
8	...	...	.11	1.07	3.42	1.16	.22	.4	.08	.85	.4	.39	...	...	...	.18	.24	.06
9	...	.38	.05	...	.2	...	.14	...	.09	.22	.14	.07	...	.5	.04	.1	.2	.02
10	.1	...	...	.2	...	...	.28	...	.12	.16	.77	.24	.6	...	.18	...	...	.23
11	.1	...	.05	...	...	...	...	...	...	.77	.86	1.02	...	.24	...	.1	...	.01
12	...	...	...	.18	.12	.32	.23	.14	.29	.10	...	2.28	...	...	...	...	...	.02
13	.10	...	.14	.20	...	.14	1.59	.69	.48	...	.20	.01	...	...	.19	...	...	...
14	.57	.9	.02	...	...	...	...	.4	...	.74	.22	1.64	...	...	...	...	...	.01
15	.1	.13	.10	.3	...	.48	...	1.32	.08	.12	...	...	...	...	.01	.1	.14	...
16	...	...	.01	.80	.85	1.28	...	.41	.02	1.34	.41	...	.43	.5	.45	.9	.8	.02
17	...	1.00	...	.18	.10	.55	...	...	.02	...	...	...	2.90	4.35	3.78	...	.2	...
18	.1	...	.01	.13	.6	.11	.4	.2	...	.3	.30	.06	.17	...	.34	.50	.3	.33
19	...	.17	.05	.3	.11	.05	.68	.25	.60	.57	.11	.10	.42	.50	.53	.42	.21	.19
20	.15	.26	.28	.27	.57	.06	.20	.10	.03	.12	.10	.04	...	.2	.04	...	.8	.03
21	.18	.8	.08	...	...	...	...	.2	.31	.74	.11	.61	.20	.5	.04	1.00	.40	.56
22	.1	...	...	.35	.20	.33	.8	...	...	4.07	1.67	.99	...	.7	.03	1.22	1.81	.36
23	.18	.31	.01	.44	1.70	.14	.3	.5	.23	.15	.8	...	.7	.4	.08	...	...	...
24	.25	.45	.52	.2	...	.07	.8	.3	.25	1.28	.57	.01	.8	.8	.22	...	...	...
25	.42	.30	.62	.3	...	.01	...	.34	.03	.9	.4	.23	...	...	.03	...	...	...
26	.3	.10	.02	.32	.5	.11	.57	.15	.65	.8	.2	.18	.2	.7	.11	...	...	...
27	.25	.8	.18	...	...	...	...	.20	.10	...	.2	.64	...	...	...	...	...	...
28	.8	...	.29	.2	...	...	.23	.42	.12	...	.8	...	...	...	...	...	...	...
29	...	...	.22	.1	.24	...	.88	.45	.87	...	.1	...	...	...	...	.97	...	.47
30	...	.29	.02	.1	.12	.06	1.11	.12	.13	...	...	...	...	...	...	...	...	.02
31	...	...	...	.81	.63	.07	...	...	...	...	...	...	...	...	...	.26	.20	.23
TOTAL	2.47	3.99	3.02	8.67	10.98	7.20	8.25	11.70	5.88	14.33	8.02	19.06	7.89	8.30	8.18	5.91	4.94	4.65

## APPENDIX 19—

1861.]

DAYS.	January.			February.			March.			April.			May.			June.			
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
1	.20	.15	.69	...	...	...	...	.1	.02	1.40	.46	.30	...	...	...	.15	.21	.05	
2	...	.1	...	.6	.42	.02	...	...	...	...	.7	...	...	...	...	...	.4	...	
3	.36	.6	.01	.1	...	...	...	...	...	.60	.1	.93	.26	.20	.16	1.72	1.14	.94	
4	.29	.16	.43	...	.2	...	.15	.9	.07	...	...	...	.14	.10	.13	.42	.12	.13	
5	...	...	...	...	...	...	...	...	...	.40	...	...	...	...	...	.07	1.28	1.37	1.10
6	...	...	.03	...	...	...	.5	...	...	1.38	.70	.16	.20	.11	.35	1.02	1.13	1.52	
7	...	...	...	.1	...	.02	...	.22	...	4.25	1.35	.48	.18	.34	.48	.10	.5	.07	
8	.19	...	.06	...	...	...	.45	.4	.05	...	.20	.23	.6	.29	.24	.32	.60	.05	
9	...	.7	.03	...	...	.03	.30	...	.09	.46	.35	.16	.16	.3	.15	...	.10	.09	
10	...	...	...	.2	...	.01	...	...	...	...	...	...	...	.8	.14	.19	.14	.07	
11	.7	...	...	.9	.64	.03	...	...	...	...	...	...	...	...	.6	.1	.03	...	
12	.1	.3	.11	1.06	.36	.03	...	...	...	...	.4	...	.1	.3	.04	...	...	...	
13	.20	.28	.19	.6	...	.09	.2	...	.05	.7	.16	.43	.15	.10	.28	...	...	.02	
14	...	.5	...	...	...	.02	...	.3	.02	.80	.75	.53	.30	...	.09	.24	.5	.04	
15	.88	.37	.46	.9	.15	...	...	.2	.01	1.06	1.50	.11	...	...	.03	.96	1.85	1.09	
16	.50	.14	.42	.2	...	.11	...	...	...	...	.1	.02	.16	.2	.15	...	.6	.10	
17	...	.8	...	.24	.10	.21	...	...	...	.8	.20	.06	...	...	.18	.70	.53	1.03	
18	...	...	...	.40	...	.50	.8	...	...	.8	...	.01	.1	...	...	.8	.25	...	
19	...	...	...	.15	...	.01	.16	.4	.32	...	...	.08	.31	.11	...	...	.18	...	
20	...	...	.02	.6	.80	.01	.15	.20	...	...	.6	.04	...	.9	...	...	.16	...	
21	...	...	...	.9	.21	...	...	.1	.06	.12	...	.45	.15	.2	.16	.30	...	.12	
22	.34	...	.15	...	...	...	.66	.6	.56	.18	.65	.04	.7	.19	.05	.6	.4	.11	
23	.6	.79	.16	...	...	.12	.13	.1	.02	.21	.55	...	...	.22	...	...	...	.01	
24	...	.3	...	...	...	.01	.14	.5	.73	...	...	.20	...	.33	.07	...	.1	.03	
25	.35	.31	.70	...	.8	...	...	...	.15	.14	.2	.21	...	.3	...	...	.16	.04	
26	.6	.25	.40	.10	...	.21	.4	.4	.10	.22	.5	.02	.48	.3	.42	.73	.52	1.14	
27	...	...	...	...	.20	...	.1	.1	.06	...	...	...	.58	.20	.62	...	.6	...	
28	...	...	...	.14	.20	.07	.10	.30	.23	.2	...	...	2.45	1.50	1.30	.95	.26	.42	
29	...	.5	.04	...	...	...	.72	.3	.04	...	.10	.09	1.37	.87	1.10	...	.2	.07	
30	...	...	.02	...	...	...	...	.14	...	.15	.27	.14	1.93	2.28	2.31	...	...	...	
31	.58	.13	.20	...	...	...	.5	...	.05	...	...	1.11	1.	.18	...	...	...	...	
TOTAL	4.09	2.96	4.12	2.60	3.18	1.50	3.21	1.30	2.63	11.62	7.50	4.69	9.92	8.17	8.70	9.20	8.89	8.52	

continued.

[1861.]

Days.	July.			August.			September.			October.			November.			December.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	-8	-22	-32	...	-35	...	-10	...	...	...	...	...	...	...	-18	-11	-30
2	1.73	2.54	.56	...	...	...	...	...	...	...	...	...	...	...	...	2	3	...
3	1.03	.63	.53	.14	...	...	...	...	.32	...	...	...	1.16	...	2.54	.42	...	.61
4	...	...	...	...	-2	...	.01	...	...	...	...	1.24	1.11	...	.08	...	...	...
5	.58	.96	.40	...	.14	.02	...	.4	.25	...	.20	...	.26	...	.20	...	...	...
6	.2	...	...	.10	.17	.70	...	.18	.01	...	...	...	.34	.50	.15	...	...	...
7	.22	.12	.27	2.74	.91	.75	...	.13	.03	.33	...	.12	.18	.37	.11	...	...	...
8	...	...	...	...	.5	.32	.33	...	.09	...	.8	...	.13	.60	.27	.10	...	...
9	.35	.42	.21	...	...	.01	.70	.43	.60	.90	1.52	1.16	.46	...	.17	.2	...	...
10	.44	.46	.46	.52	...	.08	.07	...	.01	.15	.1	.03	.14	...	.20	.19	...	.08
11	1.32	.85	1.16	.68	.77	.43	.62	.5	.66	.3	.15	.01	...	...	.92	.52	...	...
12	...	...	.18	.6	...	...	2.61	.3	.214	.8	.4	.06	.8	...	.15	...	...	.17
13	.34	.46	.60	...	.2	.13	.02	1.20	.05	.38	.8	.02	.56	.4	.50	...	...	...
14	...	.35	.04	1.32	...	.70	...	2.94	...	...	1.20	...	4.81	2.21	1.13	...	.28	.50
15	.4	.3	...	...	...	...	.05	.30	.08	.14	2.00	.76	...	...	...	.50	1.46	.61
16	.17	...	.10	...	...	...	...	...	...	.13	.55	.15	...	1.69	...	.77	.17	.38
17	...	...	...	...	.58	.09	...	...	...	1.78	.55	.40	.4	.3	.03	.14	.50	.25
18	...	...	...	.21	.3	.12	.10	.14	...	.48	.47	.63	1.93	.79	.17	.1	.59	.61
19	.8	...	.11	.10	.10	...	.20	.14	.92	.36	.30	.26	...	.4	...	.4	...	...
20	.1	.10	.11	...	...	...	...	.13	.05	1.21	4.00	.75	...	...	...	...	...	...
21	...	...	...	...	.1	...	...	...	...	.16	.21	.10	.2	.8	.02	.1	...	...
22	.2	...	...	...	...	...	10	.15	.41	...	.14	.6	.16	...	...	.07	...	...
23	.40	.40	.40	...	...	...	.04	2.40	2.24	...	...	...	...	.56	1.05	.02	...	.48
24	1.60	1.20	1.90	.3	...	.30	.04	.10	...	.23	.80	.22	.3	.11	.32	.8	.3	...
25	...	.3	.04	...	.2	.05	.01	...	...	.3	...	.09	.2	.82	...	...	...	...
26	...	...	...	.3	...	...	...	...	...	...	...	...	...	.32	...	.1	...	.01
27	.8	.14	.07	...	...	...	...	...	...	...	...	...	1.20	...	.56	...	...	.03
28	.6	...	...	...	.2	.04	...	...	.13	.69	...	.05	.2	.5	.08	.1	.64	.13
29	...	...	...	...	...	...	.73	1.73	.89	.92	.40	...	.3	...	...	.58	.66	.76
30	...	...	...	...	.3	.02	...	...	...	...	...	...	.1	.31	.11	1.63	.28	3.41
31	...	.30	.35	...	.38	.09	...	...	...	.33	4.00	.12	...	...	...	.10	.46	.17
Total	8.49	9.07	7.71	6.25	3.25	4.34	8.04	10.29	6.23	8.47	16.62	6.33	13.64	8.91	7.80	5.33	5.21	8.50

## APPENDIX 19—

1862.]

DAYS.	January.			February.			March.			April.			May.			June.			
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
1	.18	.4	.78	...	.2	...	...	...	.02	...	...	...	.10	.8	...	...	...	...	
2	.32	.6	.28	...	...	.03	...	.4	...	...	...	...	.15	...	.08	...	...	.1	
3	.42	1.56	.51	...	...	...	.19	.2	...	...	...	...	...	...	...	.49	.2	.7	
4	.46	.2	.18	...	...	.05	.11	...	...	...	...	...	...	...	...	.8	.10	.4	
5	.8	...	.03	.36	...	.07	...	...	...	.37	.36	...	...	.9	.8	...	.13	.18	
6	.2	.15	.05	...	...	.10	...	...	...	...	...	...	.12	.36	.2	...	...	...	
7	...	...	...	.2	.14	...	...	...	...	.5	...	.28	...	.6	...	...	.7	.1	
8	.21	.10	.30	.15	.2	.06	...	...	...	...	...	.22	...	...	...	2.63	2.00	1.63	
9	.2	.4	.07	.12	...	.05	...	...	...	...	...	...	...	...	...	...	.15	.2	
10	.2	.2	.03	.2	.4	.09	.2	.6	...	...	...	...	...	...	...	.3	...	...	
11	.2	.2	.16	.35	...	.10	...	...	...	.15	.6	...	...	.6	...	...	...	.4	
12	.5	.10	...	.16	.40	.07	...	...	...	...	...	.05	...	...	...	.14	.6	.7	
13	.26	.15	.18	.10	...	.15	...	...	...	...	...	...	...	...	...	...	.7	...	
14	...	.14	...	.38	.01	...	.7	.04	...	...	...	...	.29	.57	.12	...	...	.3	
15	1.23	.11	.06	.11	...	.01	...	...	.01	...	...	.04	.68	.44	.26	...	...	.2	
16	1.67	.15	.82	.8	.12	...	...	...	...	.8	...	...	...	...	...	...	.29	.46	.28
17	.2	.5	.06	.8	...	.27	...	...	...	.10	.4	...	.7	...	...	.9	...	.5	
18	...	.3	.04	...	...	.06	...	...	...	...	...	...	...	...	...	...	.12	...	...
19	...	.6	.05	.3	...	.01	...	...	...	...	.6	.04	.7	...	.4	.31	.29	.27	
20	...	.5	.01	...	...	...	...	...	...	...	...	.5	.8	.4	.2	.6	.2		
21	...	...	.13	.4	...	...	.5	.3	...	...	.16	...	...	...	.4	.4	.4	.14	
22	...	.5	.04	...	...	...	...	...	...	.3	...	.17	...	...	.7	.3	...	.31	
23	.60	.46	.27	...	...	...	...	...	.02	...	.2	.01	...	.23	...	...	.3	.2	
24	1.44	.74	.81	...	...	...	...	...	.12	...	.18	.20	1.07	.51	2.20	.5	.2	.1	
25	.56	1.00	.41	...	...	...	...	...	...	.63	.42	.41	.40	.91	.21	.75	.45	.37	
26	.4	...	...	...	...	...	...	...	...	...	...	...	.5	.4	.10	.18	.8	.17	
27	.16	.5	.47	.6	...	...	...	...	...	...	...	...	...	...	...	.7	1.74	.94	1.59
28	1.18	.25	.55	...	...	...	...	...	...	...	...	...	.11	...	.87	1.74	.75	.90	
29	...	...	...	...	...	...	...	...	...	...	...	.5	.12	.5	...	...	...	...	
30	...	...	...	...	...	...	...	...	...	...	...	.4	...	...	...	...	...	...	
31	...	...	...	...	...	...	...	...	...	...	...	...	...	.8	...	...	...	...	
<b>Total</b>	<b>8.96</b>	<b>5.40</b>	<b>6.29</b>	<b>1.68</b>	<b>1.12</b>	<b>1.13</b>	<b>.37</b>	<b>.34</b>	<b>.09</b>	<b>1.42</b>	<b>1.34</b>	<b>1.47</b>	<b>3.28</b>	<b>3.43</b>	<b>4.28</b>	<b>8.73</b>	<b>5.72</b>	<b>6.25</b>	

continued.

[1862.]

Days.	July.			August.			September.			October.			November.			December.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	...	-2	...	...	-9	...	-30	-7	-18	-7	-11	...	...	...	-32	-9	-20
2	1.12	1.00	-17	26	-4	-38	...	...	...	-27	-3	-4	...	...	-64	...	...	-33
3	...	...	-11	-36	...	-55	...	...	...	-72	2.35	-94	...	...	...	...	...	...
4	-20	...	-19	-16	-47	-15	...	-1	...	-72	6.00	-96	...	-5	...	-49	-35	-12
5	-4	-32	...	...	-60	...	...	-7	-4	-51	1.27	-26	-28	-5	-21	...	...	...
6	...	...	...	...	...	-3	...	...	...	1.03	1.61	-10	-17	-38	...	...	...	-7
7	-61	-17	-14	-32	-15	-4	-25	...	-33	...	...	-2	-21	-12	-8	...	...	...
8	-41	-7	-69	...	-9	-7	...	...	...	...	...	-15	-9	...	-8	...	-2	...
9	-8	-9	-3	-27	-10	-1	-83	-35	-2	-10	...	-4	...	...	-40	...	...	-4
10	...	...	-12	...	-23	-10	-13	...	-4	3.48	2.10	2.92	-27	-38	-1	-24	-49	-11
11	...	-1	-9	...	...	...	...	-15	-41	...	...	-2	...	...	-9	-96	-69	-61
12	...	...	...	...	...	...	...	...	-2	...	-10	...	-85	1.05	-3	-14	...	-14
13	...	...	...	...	-4	-10	-24	...	-22	...	-6	-6	1.73	2.05	1.49	...	...	...
14	-55	-31	-18	...	...	-5	...	...	-26	...	...	...	2.17	3.03	1.40	...	...	-2
15	...	...	...	-12	-10	-15	-13	-13	-30	-98	-7	-84	-3	-60	-6	...	-2	...
16	...	...	...	...	-5	...	...	...	...	...	1.85	-40	...	-4	-10	...	...	...
17	1.23	-75	1.26	-12	-15	-5	...	1.00	-31	...	-4	...	...	-70	-4	...	-7	-7
18	...	-22	-13	-54	...	-34	-28	-6	-5	...	...	-3	-37	-25	...	...	...	...
19	...	...	-1	-29	-38	-10	...	...	-17	...	...	...	...	-25	-10	-20	-9	-15
20	-44	-6	-3	1.03	-26	-40	-14	-4	-33	-59	...	-3	-89	...	-48	...	...	...
21	-56	-34	-9	-56	-30	-26	...	-4	-7	-9	-12	-8	-78	1.20	-77	...	...	...
22	-7	-11	-28	...	...	-1	-3	...	-2	...	1.50	-7	...	-70	-12	...	...	...
23	...	...	...	-27	-13	-43	...	...	...	1.21	...	1.50	...	...	-25	-82	-5	...
24	...	...	...	1.52	2.65	2.44	-29	...	2.07	...	...	...	-17	...	-10	...	...	...
25	...	...	...	-33	2.06	-44	-6	-64	-46	...	...	...	...	...	-2	...	-4	...
26	...	...	...	...	-30	...	-13	-1	-56	...	...	...	...	...	-4	-5	...	...
27	-90	-20	1.02	...	...	...	-21	-3	-5	...	...	...	...	...	-4	...	...	...
28	...	...	...	...	...	...	-60	-18	-58	-99	...	-32	-20	-7	-9	...	...	-1
29	...	-3	...	...	-30	...	-24	...	-21	-31	1.60	-54	...	...	-3	...	-1	...
30	...	...	-1	...	...	-15	...	...	...	...	...	...	...	-4	-4	...	...	...
31	...	...	-7	...	...	-4	...	...	...	...	-7	-16	...	...	...	...	...	...
TOTAL	6.21	3.68	4.64	6.15	8.10	6.38	3.56	3.01	6.59	11.18	18.84	9.14	8.21	10.98	6.44	2.65	2.65	1.96

## APPENDIX 19—

1863.]

DAYS.	January.			February.			March.			April.			May.			June.			
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
1	...	...	...	·35	·37	·09	·38	·3	·12	...	·5	·06	...	...	...	...	...	...	
2	...	...	...	·9	·2	·06	...	·1	·05	·40	·68	·58	...	...	...	...	...	...	
3	...	...	...	1·36	·6	·01	...	...	...	·35	·20	·34	...	...	...	...	...	...	
4	...	...	...	...	·9	...	...	...	·02	...	...	...	...	...	...	...	...	...	
5	...	...	...	·11	·6	·13	...	·2	...	·10	·3	·12	...	...	...	...	...	...	
6	...	·1	...	·3	·30	·21	...	...	...	...	·4	·03	...	...	...	·8	...	...	
7	...	...	·07	...	·2	·11	...	...	...	...	...	·03	...	...	·31	·4	·11	...	
8	...	...	...	...	...	...	·10	·2	·02	...	·1	·10	...	...	...	...	...	...	
9	...	·11	...	...	·43	·21	...	...	...	·23	...	·12	...	...	·55	·46	·49	...	
10	...	...	...	·90	·5	·24	·21	·10	·11	·8	·12	...	·7	·71	·03	·2	...	...	
11	·23	...	·12	...	...	...	...	·9	...	·16	·3	·11	...	·11	...	...	...	·02	
12	...	...	·02	...	...	...	...	·5	·17	·7	...	·16	·2	...	·02	...	·5	...	
13	...	...	...	...	...	...	...	...	·14	...	·6	...	...	...	·23	·11	·12	...	
14	·9	...	·02	·55	·11	1·30	...	...	...	...	·11	·17	...	...	...	·15	·15	·11	...
15	...	·2	·09	·7	·65	·03	...	...	...	...	·8	·01	...	...	·10	·14	...	·08	...
16	·11	·20	·06	...	·3	...	...	...	·05	...	·12	...	·25	...	...	...	...	...	...
17	...	...	...	...	·5	...	...	...	·02	...	...	·07	...	·10	·01	...	...	...	...
18	...	...	·06	...	·2	...	...	...	·85	·8	·15	·12	·2	·05	·2	...	·10	...	...
19	...	...	...	...	...	...	·37	...	...	...	...	·01	·7	·14	·29	·5	...	·01	...
20	...	...	...	·9	...	·15	·47	·8	·18	·8	·2	...	...	·2	...	·33	·8	·29	...
21	...	...	...	·12	·4	·37	·30	·8	·23	·17	·38	...	...	...	...	...	...	·23	...
22	...	...	...	...	·5	·07	...	·6	·08	...	·6	...	...	...	·03	·1	...	·03	...
23	...	...	...	...	·9	...	·11	·9	·05	...	...	...	...	·3	...	...	·4	...	...
24	...	·7	...	...	·4	·03	·9	...	·53	...	...	...	...	...	...	·17	...	·08	...
25	·5	·9	...	·90	·33	·33	...	...	·03	...	·3	...	...	...	·10	·10	·32	...	...
26	...	...	·01	·53	·65	·40	...	...	·05	...	·10	...	...	...	·03	...	·6	·01	...
27	·29	·9	·06	·14	·50	·09	...	...	...	...	...	...	...	...	...	·12	·4	·08	...
28	·7	·11	·37	...	·11	·13	1·05	...	...	...	...	...	...	...	...	...	...	·09	...
29	...	·9	·04	...	...	...	...	·42	·29	·50	...	...	...	...	...	...	...	...	...
30	·21	·5	·27	...	...	...	...	...	·2	·35	...	...	...	...	...	...	...	...	...
31	...	·2	...	...	...	...	...	·23	·25	·11	...	...	...	...	...	...	...	...	...
TOTAL	1·05	·86	1·19	5·24	4·07	3·96	3·73	1·19	2·81	2·49	2·20	2·06	·53	1·13	·66	2·20	1·66	1·62	

continued.

[1863.]

DAYS.	July.			August.			September.			October.			November.			December.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	.5	...	.04	.64	1.67	1.52	.32	...	.18	.15	.64	.15	...	...	.19	...	...	...
2	...	...	...	...	...	.08	.1	...	.01	...	...	.16	.20	...	.27	.46	.35	.85
3	.8	.4	...	.20	...	.01	.7	.14	.10	.73	.14	...	.15	...	.14	2.20	1.20	.48
4	.87	.57	...	.10	.24	.77	.10	...	.96	...	...	...	1.29	1.54	.81	...	.1	.19
5	.12	...	.54	.52	.80	.67	.9	.15	.06	...	.2	.01	.58	.57	.26	.15	...	...
6	.22	.37	.04	.25	.10	.72	...	...	.19	...	...	...	.22	.29	.63	...	...	...
7	...	.4	.14	.15	.7	.16	.2	.2	...	.76	.65	.78	.32	.30	.11	...	...	...
8	...	.10	...	...	...	.03	...	...	...	...	.5	.08	.16	.30	.39	.16	...	.02
9	.9	.16	.05	.8	.5	...	.3	.2	.01	...	...	...	.14	.29	.01	...	.14	.09
10	...	...	...	.5	.20	.03	.68	.5	.65	.13	.6	.02	.8	...	...	.6	.04	...
11	...	.12	.06	...	.3	.04	1.35	.16	.71	...	...	...	.10	...	.09	.9	.8	.03
12	...	.10	...	.6	.3	.06	...	...	.01	...	...	.04	...	.8	.04	...	...	...
13	...	...	...	.6	.5	.41	.20	...	...	.3	...	.29	.56	...	.06	...	...	.25
14	.30	.20	.13	.6	...	.05	...	...	...	.18	.7	.02	...	...	...	...	...	...
15	.97	1.35	.42	...	.4	.04	.7	.24	.50	.15	...	.07	1.44	1.80	1.20	.20	.18	.12
16	.16	.4	.27	...	...	...	.96	.36	.19	.36	.31	.04	.12	.27	...	.23	.7	.16
17	...	...	.07	.2	.15	.06	1.35	1.50	.01	.8	...	.13	.14	.10	.24	...	.5	...
18	.3	...	.02	.1	.15	...	...	...	.08	.13	.45	.04	.5	...	.59	.2	.12	...
19	...	...	.01	.7	...	...	.8	.4	...	.4	...	.09	.17	.58	.20	.3	...	...
20	...	...	.18	...	...	...	.87	.17	.25	...	...	.08	...	.45	.13	...	...	...
21	.2	...	.10	...	...	...	...	.17	.01	.5	.2	.02	.33	.5	...	...	.4	...
22	.21	.45	.29	.2	.2	.04	.2	.5	...	.6	.3	...	.20	.42	.92	.11	.50	...
23	.2	.11	.18	.1	...	...	1.14	1.11	.55	...	...	...	...	...	...	.25	.20	.30
24	...	...	...	5.17	1.07	4.19	...	...	...	.4	...	.25	...	...	...	.2	.4	.03
25	...	...	.01	.1	...	...	...	...	...	.37	.8	...	...	.4	.07	.5	...	...
26	.76	.25	.25	1.85	.33	.78	...	...	...	...	...	...	.40	.17	.11	.3	.5	.01
27	.15	.20	.09	1.53	.48	2.26	...	...	...	...	...	...	...	...	.02	.3	.12	.16
28	.48	.3	.53	.55	.40	.05	.46	.8	...	.60	.10	.02	.15	...	.13	...	.06	...
29	...	...	...	.21	.11	.03	.26	.40	.10	.6	...	.06	.12	.12	.12	.2	...	.01
30	...	.2	...	...	...	.02	.2	...	.09	.9	.2	...	...	.47	.06	.32	...	.24
31	.16	.5	.15	1.00	...	.53	...	...	...	...	...	.10	...	...	...	.18	...	.04
TOTAL	4.69	4.20	3.47	12.62	5.99	12.45	8.10	4.66	4.66	3.97	2.68	2.55	6.82	7.84	6.66	4.68	3.21	3.08

## APPENDIX 19—

1864.]

DAYS.	January.			February.			March.			April.			May.			June.				
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C		
1	.02	.5	.04	.07	...	.04	.18	...	.06	.2	...	.14	...	...	.02	...	...	...		
2	.6	.40	.13	.10	.18	.14	...	...	.03	...	...	...	...	...	.03	...	...	...		
3	1.24	.44	.54	.2	.7	.04	...	...	...	...	...	...	...	...	.2	...	.28	.9	.40	
4	.2	.30	.08	.9	...	...	.3	...	.10	...	...	...	...	...	.6	...	.01	...	.4	.04
5	.2	.20	.05	...	...	.04	...	...	...	...	...	...	...	...	.40	.15	.16	.12	.3	.10
6	.16	.14	.07	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.04
7	...	...	...	.5	.5	.04	...	...	...	...	...	.3	...	...	...	...	...	...	...	...
8	.2	.5	.04	...	.4	.05	.6	...	.15	.4	...	.05	...	...	...	...	...	...	...	...
9	.6	.3	.12	...	...	.01	.30	...	.07	...	...	...	...	...	...	...	...	...	...	...
10	.12	.4	.08	.12	...	...	.9	.6	...	.10	...	.02	...	...	...	.2	...	...	.24	...
11	.5	.3	.07	...	...	...	...	...	...	.30	.21	.18	...	...	...	...	...	...	...	...
12	.6	...	.02	.25	.3	.22	...	...	.09	...	...	...	...	...	...	.02	...	.6	.02	...
13	.21	.28	.13	.3	.7	.20	...	...	...	...	...	...	...	...	...	...	...	.3	...	...
14	.25	.10	.16	...	...	.01	...	...	...	.2	...	...	...	...	1.44	1.20	1.85	...	.2	...
15	.15	.8	.08	...	.5	...	.5	...	.04	.3	...	...	...	...	.72	1.25	.30	...	...	...
16	.14	...	...	...	...	.02	...	...	...	...	...	...	...	...	...	.02	...	...	...	...
17	...	.12	.15	.12	...	.03	...	...	...	...	...	...	...	...	.04	...	...	...	...	...
18	...	.16	.01	.14	.20	.11	.25	.20	.03	...	...	...	...	...	.16	.6	.02	.92	.22	.19
19	.10	.5	.02	.8	...	.04	.5	...	.07	.3	...	...	...	...	.26	.12	...	.4	.06	...
20	.14	.12	.11	.19	.17	.30	...	...	...	...	...	...	...	...	.4	...	.24	.4	.22	...
21	.16	.28	.09	.2	.14	.08	.1	...	...	...	...	...	...	...	.36	.1	...	.2	.08	...
22	.8	...	.03	.33	.32	...	...	...	...	...	...	...	...	...	.10	...	.02	.20	...	...
23	...	...	...	...	...	.03	...	...	...	...	...	.2	...	...	...	...	...	.3	.04	...
24	...	...	...	...	...	.5	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25	.10	...	.03	.25	.9	.32	...	...	...	...	...	.18	...	...	.11	...	...	.6	...	...
26	.2	.3	.10	.45	.8	.09	...	...	...	...	...	...	...	...	...	...	...	...	...	...
27	.20	.12	.16	.11	.8	.26	...	...	...	...	...	...	...	...	...	...	...	.56	.54	.30
28	...	...	.04	.20	.2	.48	...	...	...	...	...	...	...	...	...	.3	...	.10	.3	.01
29	.10	.5	...	...	...	...	...	...	...	...	...	.6	...	...	.6	...	...	...	...	...
30	...	...	.02	...	...	...	...	...	...	...	...	.5	...	...	.2	.1	.16	...	...	...
31	...	...	.01	...	...	...	...	.2	...	...	...	...	...	...	.2	...	.05	...	...	...
TOTAL	3.48	3.07	2.38	2.62	1.62	2.25	1.04	00.26	.64	.90	0029	.64	3.46	2.93	2.66	2.50	1.19	1.74	...	

continued.

[1864.]

DAYS.	July.			August.			September.			October.			November.			December.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	...	...	.02	.3	...	.03	...	...	.02	.5	...	.52	.14	.12	...	.2	...
2	.36	.1	.08	.1	...	.02	.10	...	...	.12	.35	.03	.10	.42	.11	.72	.20	.05
3	.41	.33	.19	...	.84	...	...	...	...	.18	.12	.20	.38	.2	.06	...	...	...
4	.4	...	...	...	...	...	.14	.12	.34	.32	...	.35	.6	.30	.57	.12	...	.26
5	...	...	...	...	...	...	...	.66	.21	.2	1.45	.17	...	.38	.01	.26	.2	...
6	.26	.11	.04	...	...	...	...	...	...	...	...	...	.2	.1	.07	.8	.7	.06
7	.3	.54	.13	..	...	...	.26	.2	.28	...	...	...	.11	.2	.08	.26	.10	.15
8	.8	.9	.08	...	...	.01	...	...	...	...	...	.05	.24	4.16	.42	...	.5	.17
9	.12	.2	.02	.10	...	.20	...	.10	...	.22	.72	.11	.15	.66	.03	.24	.7	.18
10	...	.6	.20	.33	.79	.13	...	...	...	...	.3	.48	.48	.30	.41	1.22	.30	4.19
11	.22	.13	.93	...	...	...	.25	.1	.21	.15	...	.14	...	...	1.07	.30	1.19	...
12	...	...	...	.12	.22	...	2.30	1.54	2.00	...	.3	.09	.4	.28	.09	.44	.45	.33
13	.86	.46	.60	...	...	.05	1.00	.33	.84	.9	...	.16	...	...	1.62	.27	1.24	...
14	...	...	...	.50	.21	.06	.80	1.75	.82	.7	4.55	...	...	.74	1.30	.4	.08	...
15	...	...	...	.12	.10	.09	1.15	.40	.69	...	...	.06	.6	.1	...	...	...	...
16	.25	.17	.65	.24	.11	.05	.75	.43	.24	...	...	.11	.16	.15	.02	.35	.30	.33
17	1.12	.50	.45	.58	1.30	.35	.22	.46	.31	...	.61	1.10	.62	1.24	.40	.90	.20	.38
18	...	...	...	1.33	.32	.03	.52	.46	.25	.7	.5	.62	...	.2	.03	...	.1	...
19	.42	.48	.58	.32	.6	.29	.91	.33	1.42	1.72	.2	.42	...	.3	...	...	...	...
20	.36	.52	.15	...	.3	.04	.22	.24	.16	.34	.39	.21	.26	.1	.4	.18	.30	.12
21	.13	.7	.05	...	...	...	...	...	...	1.35	.90	.76	.33	.43	.32	...	.38	.06
22	1.28	1.22	.68	.40	.3	.28	.57	.22	1.18	1.45	1.45	1.37	.22	.21	.12	...	.3	.01
23	.9	.6	.14	.38	.64	.81	2.41	1.45	.57	.57	.15	.25	.16	.26	.24	...	.3	...
24	1.41	1.31	.89	...	.13	.05	.25	1.23	.17	.71	.56	.83	.35	2.41	.03	...	...	...
25	.26	.75	.30	.82	.56	.24	...	.6	...	...	.02	...	...	.02	...	...	...	...
26	.7	.6	...	1.85	2.20	1.85	...	...	...	.16	.10	.74	...	...	...	...	...	...
27	.8	...	.09	1.12	1.14	1.11	...	.34	.10	.14	.82	.34	...	...	...	...	...	...
28	.31	.3	.02	...	...	...	...	.50	.32	.19	.33	.20	.40	...	...	.12	...	.06
29	.36	.10	.71	...	...	...	.25	...	.36	...	...	.11	...	.66	2.45	.10	.2	.05
30	.48	.4	.24	.16	...	.75	...	...	...	...	...	...	.10	...	1.29	.8	.16	.18
31	...	...	...	...	.21	.11	...	...	...	.15	...	.02	...	...	...	.20	.25	.13
TOTAL	8.90	7.11	6.72	8.40	8.92	6.42	12.63	10.47	10.34	8.18	12.55	9.24	4.36	12.12	7.67	7.66	3.57	6.22

## APPENDIX 19—

1865.]

DAYS.	January.			February.			March.			April.			May.			June.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	.5	.3	.16	.22	.25	.09	.25	...	.46	...	.8	.14	...	...	...	.15	.19	.40
2	...	...	...	.4	...	.13	...	...	...	...	...	...	...	...	...	.5	...	.03
3	...	...	.08	.3	.5	.07	...	.7	...	...	...	...	...	...	...	.60	.90	.74
4	.17	.10	.22	...	.4	...	...	...	...	...	...	.03	...	...	...	.50	.91	.19
5	1.00	1.10	.42	...	...	...	...	...	...	...	.1	...	.22	...	.30	.44	...	.31
6	...	...	...	...	...	.01	...	...	...	.34	.2	...	.32	.5	.19	.20	...	...
7	...	...	.03	.2	.5	...	...	.1	.01	...	...	...	.30	.7	.16	...	.30	.06
8	.15	...	.04	.37	.14	.24	...	...	...	1.76	.50	1.54	...	.15	.09	.26	.10	.09
9	...	...	...	...	...	.41	.13	...	.16	.20	.29	.21	.60	1.42	.46	...	...	.04
10	...	...	...	.4	...	...	...	...	...	.60	.15	.79	.75	.15	.18	...	...	...
11	...	...	...	.21	.7	.36	...	...	...	...	...	.08	.33	.26	.02	.12	.2	...
12	...	...	.01	...	...	...	...	...	...	...	...	...	1.35	.26	.12	...	...	...
13	...	...	...	...	...	.8	.3	.05	...	...	...	.02	1.69	2.45	.25	1.52	1.20	.67
14	...	.3	...	.7	.1	...	...	...	.02	...	...	...	.18	.8	.12	.40	.58	.47
15	.10	.56	...	...	.2	.08	...	...	.18	.15	.10	.21	...	...	.03	.50	.15	.20
16	...	...	...	...	...	.8	.50	.03	.5	...	.04	.14	.70	.42	2.05	1.58	1.69	
17	...	...	...	.10	.4	.22	...	.8	...	...	.5	.02	2.30	1.25	1.78	.80	.42	.85
18	.20	.16	.12	.14	...	.22	...	.1	...	.16	.7	.05	.30	.2	.12	1.76	.48	.81
19	.33	.3	.01	...	...	...	...	...	.05	...	.30	...	...	...	...	.4	.15	.07
20	.10	.3	.16	.4	...	.03	...	...	.6	...	.05	...	...	.04	.34	.54	.34	
21	.24	.6	.04	...	...	...	...	...	...	.14	...	.16	...	...	...	.8	.5	.04
22	.8	.5	.18	.48	.70	.04	...	...	.12	...	.39	...	.2	...	...	.1	...	
23	.7	...	.11	...	...	...	.13	.1	.08	.6	.13	.05	.5	.12	.04	...	.3	...
24	...	...	...	...	...	...	...	.28	.39	.15	.4	.4	.02	...	...	.6	...	...
25	...	...	...	...	...	...	.4	.22	.07	...	.17	.09	...	...	.14	...	...	.03
26	...	...	...	.2	...	.05	...	...	.03	.16	.4	.07	.9	.4	.05	.24	.9	.08
27	...	...	...	.52	.7	.27	...	...	...	.26	.11	.94	.8	...	...	.5	.68	.03
28	.2	...	...	...	...	.33	...	...	...	.4	.2	.40	...	.29	.03	.20	...	.33
29	.3	...	...	...	...	...	...	...	...	.04	...	...	.02	.8	.5	...	.27	.17
30	.26	.77	.43	...	...	...	...	.5	.04	.8	...	.02	.22	.10	.12	.10	.53	.18
31	.9	.2	.08	...	...	...	...	.27	...	.11	...	...	...	.16	.29	.11	...	...
TOTAL	2.89	2.14	2.09	2.30	1.44	2.55	1.26	1.37	1.48	4.22	2.08	5.34	9.16	7.77	4.77	10.73	9.08	7.70

continued.

[1865.]

DAYS.	July.			August.			September.			October.			November.			December.			
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
1	...	...	.05	...	.53	.07	...	...	...	...	...	.12	.68	1.10	.90	.40	.10	.07	
2	.26	.36	.35	.17	.17	.50	.80	.3	...	...	...	.2	.09	...	.3	...	.20	.16	.51
3	1.50	.88	.64	.23	.18	.69	.90	.31	.10	...	3.85	.12	...	...	...	.34	.14	.44	
4	1.40	.55	1.00	...	.18	.09	...	.11	.83	...	...	.15	.15	.10	.6	.15	...	...	.16
5	.16	.15	.18	.9	.75	...	...	.24	.22	...	...	.2	.02	.15	.3	.23	...	...	...
6	.33	...	.22	.11	.4	.06	.18	...	.08	...	...	.9	.16	1.75	3.25	.52	...	...	...
7	.40	.43	.23	.2	.5	.18	.14	.8	.37	3.00	1.40	4.48	...	...	...	...	...	...	...
8	.15	.8	.17	...	...	.05	.30	.30	...	...	...	.78	...	.1	...	...	...	...	.30
9	...	3	...	.6	.2	...	...	...	...	.65	.55	...	...	...	...	...	...	...	...
10	...	...	...	.18	.53	.25	...	.3	...	.6	...	.02	...	...	...	.13	...	.12	...
11	...	...	.03	.42	.23	.96	.35	.45	.20	...	...	.13	.32	...	...	...	...	...	.09
12	.55	.29	.43	.82	.27	.19	...	...	...	.76	.56	.02	...	...	...	...	.33	...	.11
13	...	1	.08	.60	.41	.24	.8	.18	.15	.12	.35	.14	...	...	...	...	...	.5	.10
14	.56	.14	1.13	.60	.50	1.16	...	...	...	.78	...	.55	...	...	...	.40	.39	.01	...
15	1.03	.70	.68	.10	.4	.16	.32	...	.52	...	...	.09	...	...	...	.54	.17	.05	...
16	.80	.17	.26	2.20	1.91	.85	.14	...	.08	...	...	...	...	...	...	.02	.18	.11	.01
17	.18	.4	.07	...	.1	.11	...	...	...	.16	...	...	...	...	...	.26	.13	.21	...
18	.32	.4	.14	.27	.3	.08	...	...	.02	.32	...	...	...	...	...	...	...	...	.05
19	.14	.80	.20	...	.4	.18	1.63	.88	2.65	...	.20	.23	...	.16	...	.55	.43	.75	...
20	...	.1	.01	.9	.3	.10	...	...	...	1.32	.96	.64	.40	.4	.60	.15	.39	.16	...
21	.2	...	.02	.18	.75	.37	...	...	...	1.12	.82	.24	.64	.38	.10	.70	1.65	1.32	...
22	.48	.6	.05	.56	.35	.03	...	...	...	.1	...	.16	.26	.41	.68	...	.4	.25	...
23	...	.12	.35	.8	.9	.06	...	...	...	.12	.21	.14	...	...	.17	.22	...	.27	...
24	.20	.17	.06	.20	.36	.46	...	...	.01	.30	.20	1.15	...	...	.02	...	...	.10	...
25	.10	.38	.36	...	.3	.12	.6	...	.22	.14	.20	.09	...	.5	...	.22	.23	.52	...
26	.37	.50	.37	.35	.45	.47	.14	.37	.36	.7	.3	...	...	...	...	...	...	.04	...
27	.42	.4	.12	.25	.32	.31	...	...	...	...	.3	...	.20	...	.01	...	...	.08	...
28	...	...	.02	.16	.7	.14	...	.2	...	.20	.21	.36	...	...	...	.42	...	.07	...
29	.8	...	.07	.64	...	...	.20	.28	.20	.45	.50	.13	...	...	.02	.52	.52	.53	...
30	...	...	.02	.23	1.3	.14	.32	.5	.54	.62	3.25	.14	...	...	...	.46	1.41	.72	...
31	...	.10	...	.32	.37	.82	...	...	...	1.72	2.69	1.15	...	...	...	.38	.28	.13	...
TOTAL	9.45	6.05	7.31	8.93	9.74	8.84	5.56	3.33	6.55	11.92	16.42	11.49	4.18	5.52	3.42	6.50	6.20	7.17	...

## APPENDIX 19—

1866.]

DAYS.	January.			February.			March.			April.			May.			June.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	.10	.21	.33	.50	...	.10	...	...	.19	...	...	...	...	...	...	...	...	...
2	.16	.16	.01	...	.3	...	...	...	...	...	...	...	...	...	...	...	.11	.03
3	.12	.20	.13	...	...	.05	...	...	...	...	...	...	.8	...	.06	.3	.11	.06
4	...	...	.01	.10	...	.04	.15	.4	.07	...	...	...	...	...	...	...	...	.33
5	...	...	.20	...	.4	.07	...	...	.01	...	.11	.19	.4	...	...	.10	.3	.04
6	.65	.3	1.22	.27	.14	.06	...	...	...	...	...	...	.17	.3	.28	...	...	...
7	.10	...	...	...	...	...	...	...	...	...	...	...	.2	.67	.19	...	...	...
8	.13	.9	...	.41	1.00	.36	...	...	...	...	...	...	...	...	...	...	...	...
9	...	...	.02	.56	.26	.44	...	...	...	...	...	...	...	...	.10	.15	...	.12
10	...	.3	...	.13	.11	.04	...	...	...	...	...	...	...	...	.09	.5	.5	...
11	.4	.7	.05	.5	.10	...	.15	...	.15	...	...	...	.15	.1	.30	...	.2	...
12	.5	...	.18	.24	.30	.23	.50	.43	.35	...	...	...	...	...	.03	...	...	...
13	...	...	.05	.30	.34	.70	...	...	...	...	...	...	.7	...	.31	...	...	.03
14	.21	.9	.20	.12	.1	.26	.50	.21	.12	.12	...	.05	...	...	.01	...	...	...
15	.42	.39	.22	.20	.2	.10	.72	.30	.52	...	.11	...	.80	.30	.50	.3	...	.03
16	.10	.3	.08	...	.10	...	...	...	...	.90	.37	1.03	.50	1.03	.06	...	.1	...
17	.30	.54	.10	.11	...	.03	...	...	...	...	...	...	...	...	.11	...	...	...
18	.6	...	.07	.15	...	.31	...	...	.02	...	...	...	...	.13	...	.5	...	.17
19	.4	.4	.08	...	...	.03	...	.7	.01	...	.2	...	...	...	.04	...	.8	...
20	...	.3	.01	...	.1	.04	...	.6	...	...	.13	...	...	...	...	...	...	...
21	...	.4	...	...	.2	...	...	.7	...	...	.1	.01	...	...	...	...	...	...
22	.30	.38	...	...	.2	...	.15	...	.04	...	...	.11	...	.5	...	...	...	.02
23	.65	...	.16	.10	.7	.02	...	.3	...	.15	.18	...	.10	...	.07	...	...	.03
24	.14	.2	.06	...	...	...	...	...	...	...	...	...	...	.5	...	.33	.25	.50
25	.40	.0	.07	...	...	...	...	.8	.4	...	...	...	.01	.8	...	.01	.23	.25
26	...	.9	...	...	...	...	...	.6	...	...	...	.02	...	...	.50	.23	.43	...
27	...	...	...	...	...	...	...	...	...	...	...	.8	.1	...	.4	...	.08	...
28	...	...	...	...	...	.04	...	...	...	...	...	...	.27	.21	.79	...	...	...
29	.12	...	.01	...	...	...	...	.1	.01	...	...	.04	...	...	.3	.8	...	.09
30	.10	...	.20	...	...	...	...	.19	...	...	.5	...	...	...	.21	.50	1.55	.16
31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL	4.19	2.44	3.46	3.24	2.57	2.92	2.25	1.51	1.49	1.17	.98	1.46	2.36	2.49	3.16	2.04	2.77	2.36

*continued.*

[1866.]

DAYS.	July.			August.			September.			October.			November.			December.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	.18	.3	.05	...	.3	.25	...	.79	...	.94	.6	.04	.22	...	.21	.52	.54	.36
2	1.32	.70	.31	...	...	.02	.23	...	.07	1.42	.29	.28	.62	.14	.67	.94	.91	.57
3	.5	.7	...	1.14	.38	.74	.5	...	...	.6	.45	1.10	.42	.14	.18	.4	.39	...
4	.71	.50	.42	.15	.4	.01	...	.13	.03	2.90	.15	.20	.28	.30	.04	.73	.95	.53
5	...	.1	...	.50	.11	.09	.2	.1	.33	...	.77	1.87	.13	...	.14	.2	.10	.04
6	...	.29	.07	...	.4	...	...	...	...	.88	.1	.12	...	...	.12	.18	.9	.14
7	.7	...	.06	...	.1	...	2.45	2.30	.64	...	.26	.02	.13	...	.24	.32	.24	.02
8	.6	.21	...	.6	.3	.38	.50	.5	1.10	...	.31	...	...	.6	.11	.20	.4	.31
9	.73	.41	.09	.2	.3	.10	.4	.3	.10	.13	...	.08	...	...	.03	...	...	...
10	.8	.5	.10	.91	.76	.54	...	.7	.03	.72	...	.06	...	.20	...	.78	.49	.20
11	.50	.12	.21	1.40	1.45	.96	...	...	.20	...	.60	.49	2.10	.1	3.11	1.04	.76	.75
12	.66	2.40	.24	.8	.43	.43	...	...	...	.34	.10	...	...	.4	.25	...	...	.02
13	...	.10	.20	...	.1	.03	...	...	...	...	.15	.90	1.84	.32	...	.75	.05	...
14	...	.30	...	...	...	...	.25	.4	.31	.10	...	...	.20	...	.74	.27	.15	.07
15	.36	...	.12	.18	...	...	...	.1	...	.5	...	...	...	.2	.07	.30	.12	.24
16	.38	.33	.46	...	.17	.28	...	.3	...	...	...	...	.10	.6	.04	.21	.8	.80
17	...	.3	.05	.10	.7	.37	...	.2	.05	.40	...	.04	.7	.6	...	.2	.19	.26
18	...	...	.01	...	.5	.05	.24	.15	.10	.68	.18	.20	...	...	.25	.3	.25	...
19	.73	.41	.23	.10	.1	.08	...	.6	...	...	.82	1.09	...	.1	...	...	...	.02
20	.12	.55	.34	.22	.43	.05	...	...	...	...	.66	...	...	...	.01	...	...	...
21	...	.1	...	1.40	1.25	1.10	.24	.31	...	...	...	...	...	.10	.01	...	...	...
22	.21	.16	1.06	.52	.73	.53	.20	.1	.12	...	.11	.02	.56	.40	.04	...	...	...
23	...	...	.02	...	.39	.10	...	...	.01	.44	.6	.13	.55	.71	.15	...	...	...
24	.70	.1	.53	.50	.30	.15	...	...	...	...	.35	.18	.7	.1	.7	.26	...	.02
25	.55	.14	.44	.32	2.10	1.95	.30	.64	.35	...	...	...	.4	...	...	...	...	.01
26	.46	.6	.30	1.58	...	...	.10	...	.06	.40	.17	.10	...	...	...	...	...	...
27	.13	.1	.32	.6	.49	.11	...	...	...	.20	.5	.11	.70	...	.14	...	...	...
28	...	...	.03	.28	...	...	.32	...	...	.8	...	.12	.48	.7	.02	...	...	.05
29	...	...	.06	...	...	...	...	.15	.03	.32	...	...	.11	.63	.10	.40	.50	.54
30	.6	.18	.11	1.26	.55	.41	.25	.8	.09	...	...	1.03	.30	.31	.74	...	.11	.07
31	.24	.7	.65	1.19	...	2.41	...	...	...	.36	.40	.70	...	...	...	...	...	.5
TOTAL	8.30	7.15	6.48	11.97	9.86	12.14	5.19	4.88	3.62	10.42	5.80	9.13	7.98	5.11	7.55	6.48	6.44	5.47

## APPENDIX 19—

1867.]

DAYS.	January.			February.			March.			April.			May.			June.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	...	-32	...	...	...	...	-1	-03	...	-2	-02	...	...	...	-32	-13	-07
2	-7	-40	-15	-60	-12	-01	-53	-17	-09	...	-13	-25	...	-43	...	-48	-18	-31
3	...	-16	-25	...	...	-37	...	-3	-02	-56	-5	...	-216	-7	-45	-15	-5	...
4	-36	-3	-20	...	...	...	-5	...	-08	-16	-10	-25	-10	-22	-05	...	...	-04
5	-2	...	-03	...	...	...	-17	-2	-15	-10	-10	-22	-4	-21	-04	-6	-8	-11
6	...	...	...	...	...	...	...	-3	...	-22	-22	-12	...	-1	...	-46	-44	-30
7	...	-2	...	...	...	...	-5	...	...	-8	-20	1-10	...	...	...	-40	-77	-40
8	-25	-20	-05	...	...	-01	...	...	...	-2	-3	-38	-14	-6	-21	-216	-67	-30
9	-6	...	...	...	...	...	...	...	...	...	...	-02	...	...	...	-8	...	-04
10	...	...	-12	...	-8	...	-12	-2	...	...	-4	...	...	...	...	...	...	...
11	...	-3	-02	-2	-2	-08	...	...	...	...	...	...	...	...	...	-10	-3	-10
12	...	...	...	...	...	...	...	...	...	-28	...	...	...	...	...	...	-9	-05
13	-14	-8	-05	...	-7	...	...	...	...	...	...	...	-10	...	...	-8	-53	-38
14	-20	-16	-18	-75	1-20	-89	...	-1	...	...	-1	...	...	...	...	-34	-3	-20
15	-6	-1	-02	2-10	-79	1-27	-3	...	...	...	-8	...	...	...	...	-10	...	-01
16	...	...	...	1-10	-78	-76	...	-1	...	...	-35	...	...	...	...	-16	-5	...
17	...	...	...	-25	-1	-18	...	...	...	-32	-54	-55	-65	-10	-40	-14	-10	...
18	...	...	...	-50	-32	-48	...	-7	...	...	...	-05	...	-3	...	-20	-1	-12
19	...	...	...	-2	-1	-03	...	...	...	...	-21	...	...	...	-23	-11	-6	-06
20	...	...	...	...	...	...	...	...	...	...	...	-26	-7	-53	-4	-10	-17	...
21	-16	-20	-15	...	...	...	-3	...	-06	...	...	...	-46	-13	...	-50	...	-04
22	-20	-36	-21	...	...	-07	-5	-14	...	...	...	...	-14	...	-03	1-70	1-94	1-74
23	-82	-29	-25	...	...	...	...	...	...	...	...	...	-42	-16	-23	1-20	-1	-16
24	-1	-1	...	-50	-30	-17	...	...	-10	...	...	...	-3	...	-06	-42	-15	-27
25	1-50	-38	-12	...	...	-05	-20	...	-07	...	...	...	-13	...	...	-70	1-69	1-92
26	...	...	...	-2	-5	-02	-1	...	-01	...	...	...	-6	-5	...	2-80	-67	-88
27	...	-1	...	...	...	-02	-20	-1	-08	...	-2	-09	...	-1	-05	...	...	-03
28	...	-1	...	-10	-7	-08	...	...	...	...	...	...	...	...	-24	1-20	-14	...
29	...	...	...	...	...	...	...	-1	...	...	...	...	-1	-06	-49	-48	35	...
30	...	-35	-08	...	...	...	...	...	...	...	...	...	-41	-15	-69	-67	1-17	-93
31	-12	-43	-12	...	...	...	-22	-9	...	...	...	...	-9	-9	-26	...	...	...
TOTAL	3-97	3-13	2-32	5-96	3-82	4-49	1-66	-62	-69	1-74	2-10	2-15	5-19	1-80	3-29	14-10	10-63	9-11

*continued.*

[1867.]

DAYS.	July.			August.			September.			October.			November.			December.			
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
1	.34	.12	...	.10	.21	.06	.4	...	.67	...	.1	.04	...	...	...	...	.2	.03	
2	...	.3	.15	.10	.11	...	...	...	...	.35	.9	...	...	...	...	.10	.10		
3	.20	.16	.14	...	.18	.06	...	...	...	...	...	.04	...	...	.05	.80	.167	.131	
4	...	...	...	...	.21	...	.71	.6	.28	.26	.4	.20	.66	.65	.30	.20	.8	.17	
5	.30	.04	.14	.30	.3	...	1.40	.67	1.29	...	.23	.07	...	.1	.04	...	.7	...	
6	.20	.14	.12	.40	.83	.92	.32	.1	.16	1.36	2.62	1.49	.5	...	.05	...	...	...	
7	1.06	1.55	.68	.52	.51	.35	.85	.50	.54	1.89	.79	3.40	.24	...	.10	.18	...	.4	
8	.5	...	.17	...	.1	...	.35	.45	.33	.30	.1	.11	.8	...	...	1.07	.93	.14	
9	.5	.12	...	...	.02	...	.21	...	...	.24	.12	.38	...	.68	...	.2	.9	.13	
10	.22	.41	.14	.14	.2	.02	...	.4	...	.65	.48	.77	.15	.3	...	...	.5	...	
11	...	...	...	.25	.45	.35	.20	...	...	.14	1.00	.40	...	...	...	.30	.1	.05	
12	.86	1.21	1.75	...	...	...	.24	.17	.49	.43	.9	.31	.10	.36	.26	...	...	...	
13	2.30	2.01	.73	...	...	...	.22	.46	.31	...	...	...	.12	.3	...	...	...	.13	
14	...	...	.08	.62	.13	.33	1.25	1.04	1.76	.26	.32	.11	.17	.67	.35	...	...	...	
15	.18	.6	.20	.38	.1	.22	.10	.1	.06	2.57	2.90	3.07	.33	.25	.30	...	...	...	
16	.8	.12	...	.4	.6	.04	.40	.27	.16	...	...	.4	.34	...	...	...	...	...	
17	.20	.7	.17	.40	...	.19	.16	.6	.08	.88	.6	.16	.2	...	.02	...	.2	.03	
18	.80	.41	1.01	.60	.1	.15	.7	...	.07	1.84	1.25	1.60	...	...	.01	.6	.3	.11	
19	...	.7	.02	.32	3.10	...	.60	.80	...	...	...	...	...	...	...	.25	.10	...	
20	...	...	...	.10	.11	.36	.45	.1	.02	.56	.16	.23	.2	...	.28	.12	...	.10	
21	...	...	...	...	...	...	...	...	.64	...	.21	...	.16	...	.8	.10	...	.5	.12
22	.60	.14	.25	.12	.8	.01	.6	.13	.21	.20	.1	...	...	...	...	.20	.34	.11	
23	.44	.11	.16	...	...	.01	...	1.40	.13	.4	...	.41	...	...	...	.7	.6	.02	
24	...	.7	...	1.80	...	.72	1.10	1.68	.92	.10	...	...	...	...	...	...	...	...	
25	.21	.8	.14	.85	.59	1.19	.67	.56	.19	...	...	...	...	...	...	.13	.3	.09	
26	.95	.67	1.05	1.46	1.21	2.01	.7	.15	.15	.19	...	...	...	...	...	.15	.1	.12	
27	...	...	...	.40	.82	.60	.62	.36	1.73	.32	.25	.04	.30	.30	.18	.35	.6	.22	
28	...	...	...	.12	...	...	.13	.4	.18	.16	...	...	2.55	.14	1.05	.15	.2	.02	
29	...	...	.04	.90	.6	.12	...	...	.22	...	...	...	.22	.5	...	...	...	.02	
30	.12	.1	.08	.58	1.22	.84	...	...	.09	...	...	...	...	...	.08	.8	.3	.42	
31	...	.28	.04	.72	1.24	1.13	...	...	...	...	...	...	...	...	.32	.11	.33	...	
TOTAL	9.16	7.88	7.26	11.22	11.20	9.70	10.01	9.72	9.54	12.95	10.43	13.03	3.35	3.55	3.17	4.45	3.88	3.81	

## APPENDIX 19—

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DAYS.	January.			February.			March.			April.			May.			June.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	...	16	10	17	03	13	...	07	...	...	...	...	...	...	18	21	20
2	.5	13	03	...	1	11	...	...	...	...	...	...	...	...	...	...	1	23
3	.7	2	03	12	1	11	...	...	...	...	...	...	...	...	...	...	...	02
4	...	3	08	...	...	17	.6	...	03	7	5	01	...	...	...	...	4	03
5	1.84	.61	.76	20	...	03	...	...	...	3	1	02	...	...	03	.27	...	.11
6	.8	...	...	...	13	08	...	...	07	...	1	...	...	...	...	...	...	.08
7	...	...	...	10	1	02	...	...	02	...	...	...	34	3	.05	.2	...	.08
8	...	...	...	...	11	09	.5	...	...	32	7	.09	.5	.8	.14	.97	.10	.09
9	...	...	.02	...	16	.14	...	1	...	3	3	.05	...	3	...	.16	.4	.42
10	...	10	.09	.55	...	.01	...	...	...	...	...	...	...	...	...	.52	.50	.36
11	.9	14	.29	3	...	.22	.8	1	...	...	...	...	5	...	...	...	...	...
12	...	...	...	11	2	.04	.6	...	.01	.8	...	...	...	...	...	.01	.14	...
13	...	1	...	11	3	.02	.38	.36	.30	1	.1	...	1.80	1.29	.96	...	...	.02
14	.45	.18	.60	...	11	.06	...	...	.02	...	...	...	...	...	...	...	.5	.01
15	.15	.25	.18	17	...	.06	...	...	...	10	...	...	...	...	...	...	...	.53
16	.25	.12	...	...	...	...	.15	.3	.08	...	...	...	...	...	...	...	...	.12
17	.17	...	...	...	...	...	1	...	...	6	.03	...	...	...	35	...	.05	
18	.18	.7	.19	...	...	...	...	2	.12	...	1	...	...	...	...	.7	.03	
19	.10	.1	.02	...	...	.30	.9	...	.08	.8	.13	.03	...	...	...	...	...	.04
20	...	1	...	.26	...	.12	...	...	...	...	...	...	...	...	...	.7	.4	...
21	.45	.17	.33	13	...	.33	.22	...	.04	...	...	...	11	...	...	.6	.42	.12
22	...	.8	...	...	19	.02	...	1	...	.64	.19	.12	...	...	...	.2	...	
23	...	...	.06	...	...	...	7	.4	...	...	...	...	4	...	19	.14	.20	
24	.10	.5	.17	...	1	.09	...	.20	.07	.14	.15	.12	...	3	.03	.30	.17	.08
25	...	...	.02	.23	...	.03	...	...	...	...	...	...	...	...	...	...	.17	.07
26	.8	...	.18	...	...	...	.48	...	.204	...	...	...	2	...	.17	...	.1	.03
27	.30	.3	.18	...	...	...	.40	.2	.30	.6	.5	.04	...	...	...	.9	.41	
28	.40	.12	.06	...	...	...	...	...	...	...	...	...	...	...	50	.11	.04	
29	...	.13	...	...	...	...	.32	.12	.25	...	...	...	...	...	...	.63	.24	
30	.15	.12	.15	...	...	...	.21	.7	.28	...	...	...	.11	.4	.07	...	...	
31	.77	.71	.37	...	...	...	...	...	...	...	...	...	.12	...	.08	...	...	
Total	5.68	3.09	3.97	2.11	-96	2.08	2.71	.89	3.78	1.56	.77	.51	2.60	1.54	1.54	3.73	2.82	4.76

*continued.*

[1868.]

DAYS.	July.			August.			September.			October.			November.			December.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	-1	...	-40	-4	-93	1.62	3.00	-92	...	...	-02	-8	...	...	...	...	...
2	-76	...	-29	...	...	-07	-08	-56	...	-3	-18	-29	...	...	...	...	...	...
3	...	...	-03	-55	-4	-15	...	...	...	-70	1.10	-33	-3	-4	-03	-10	-11	-09
4	...	...	...	-5	-3	-29	...	-4	...	...	...	-17	...	...	...	...	...	...
5	...	...	...	...	...	...	...	...	-04	...	...	...	-40	-37	-65	-2	...	-11
6	...	-22	-56	...	...	...	...	...	...	-26	-22	-27	-20	-10	-55	...	...	...
7	...	-3	-09	-32	...	-14	-25	-6	-72	-1	-10	-14	-24	-20	-18	-2	-2	-04
8	...	-5	-05	-24	-16	-09	-45	1.17	...	3.00	1.35	1.50	-17	-2	-01	-5	...	-03
9	-1	...	-22	-14	-1	...	...	...	-61	-26	...	...	-32	-13	-28	...	...	-04
10	4.05	4.77	1.77	-21	-13	-12	-13	...	...	-22	...	-03	2.61	1.75	2.55	...	...	...
11	-25	-6	-19	-20	-3	-22	...	...	...	-20	...	...	-3	-1	...	...	...	...
12	...	-1	-06	-01	...	...	-7	...	-05	...	...	-15	-6	-1	-32	...	...	...
13	...	-4	-06	2.13	-93	1.55	-30	...	-05	...	...	...	-18	-1	...	-8	-22	-01
14	1.30	1.24	-98	-14	-15	-20	...	...	...	-15	-4	-64	-6	-3	-10	-10	-2	...
15	-25	-1	-05	-18	-17	-44	-12	-6	...	...	-15	-08	-14	...	-05	...	...	...
16	...	...	-23	...	-2	...	...	...	...	-15	-9	-33	...	...	-07	-10	-12	-05
17	...	-7	...	...	...	...	...	...	-06	-8	-8	-16	...	...	-6	-4	-07	...
18	-28	...	...	...	-9	-05	...	-7	-10	1.10	-6	-02	...	...	-33	...	-07	...
19	...	-10	-04	...	...	-03	-20	...	-40	-14	-31	...	...	...	...	...	...	...
20	...	-30	-06	...	-3	-03	...	-15	-54	...	...	-28	-5	-17	...	-20	...	...
21	-22	...	...	...	...	...	-9	-64	...	...	-1	...	...	...	-30	-30	-02	...
22	...	...	-02	...	...	...	-01	...	...	-3	-8	-10	...	...	...	...	...	...
23	-20	-20	-01	...	-3	-08	-9	-27	-48	-48	-10	-01	...	...	...	...	2	-03
24	...	...	-01	...	...	...	...	...	...	-8	-18	-36	...	...	...	-8	-4	-04
25	...	...	-02	-27	-8	-04	...	-21	...	-8	-27	-03	...	...	...	-8	-4	-04
26	...	-1	-04	-52	-2	-19	...	-22	-08	1.93	-76	5.98	-6	...	-05	...	-08	...
27	-25	-6	...	...	-37	-18	-66	-72	...	-78	-12	-47	...	...	...	...	-24	...
28	...	-20	-16	...	...	...	-60	-2	-06	-6	-41	-28	-11	-1	-02	-13	...	-01
29	-50	-4	-41	-33	1.60	-60	-10	-31	-10	...	...	-10	-12	...	...	-10	-1	-20
30	...	-17	-10	...	-1	-05	-40	-87	-54	-14	...	...	...	...	...	1.10	2.50	-11
31	...	-1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL	9.06	7.60	5.45	5.69	3.94	5.46	5.16	8.40	4.75	9.88	5.61	11.46	5.09	2.73	5.03	2.57	3.60	1.24

## APPENDIX 19—

1869.]

DAYS.	January.			February.			March.			April.			May.			June.			
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
1	...	·0	...	·14	·10	...	·2	·1	...	...	·28	...	...	·2	...	·16	·9	·10	
2	·5	...	·05	·28	·52	·16	·60	·63	·04	·1	...	...	·32	·3	·08	·34	·20	·35	
3	·8	·4	·16	·10	·11	·07	...	·1	...	...	...	...	·8	·4	·01	·6	·3	·12	
4	...	·2	...	·14	·11	...	...	...	...	...	...	...	...	...	...	·16	·16	·14	
5	·5	·3	·02	·8	...	·12	...	...	...	...	...	...	...	...	...	·76	·75	·62	
6	·45	·26	·25	...	...	...	...	...	...	...	...	...	...	...	...	...	·2	...	
7	·4	·7	·02	...	...	...	...	·5	...	·1	...	...	·32	·19	·14	·50	·21	·88	
8	...	...	...	...	...	...	·4	...	·04	...	...	...	·5	...	·06	·2	...	·08	
9	...	·5	...	...	...	...	...	...	...	...	...	...	...	·9	...	...	·14	·03	
10	...	...	·05	...	...	...	...	·1	·09	·12	...	...	...	...	...	·12	·9	·06	
11	·8	·6	...	·8	...	·03	·20	·22	·24	...	...	·11	·2	...	·06	·10	·3	·22	
12	·10	...	...	...	...	...	·7	...	...	...	...	·02	...	·1	...	·20	·7	·22	
13	·15	...	·10	·6	...	...	...	...	·05	...	·2	·03	...	...	...	...	·2	...	
14	...	...	...	·70	·17	·19	·7	·6	·07	...	...	·04	·81	...	·41	...	·37	·24	
15	...	...	...	...	...	...	...	·4	·04	...	...	...	·4	·16	·47	·14	·9	·20	
16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	·12	·2	...	
17	·48	·27	·22	...	...	...	...	...	...	...	...	...	·4	...	...	...	·1	...	
18	·5	·7	·08	...	...	...	·10	...	·41	·10	·4	...	·32	·4	·1·03	·10	...	...	
19	...	·14	...	...	...	...	...	...	...	...	...	·02	...	·6	...	·6	·12	...	
20	·3	·6	·14	...	·1	·05	...	...	...	·14	...	·16	·8	·2	·04	...	...	...	
21	...	·1	·12	...	...	·07	...	...	...	·15	...	...	·5	·24	·15	...	·1	·08	
22	...	·1	...	·18	·9	·12	...	...	...	·5	·2	·20	·10	...	·01	·14	...	...	
23	·15	...	·12	...	...	...	·08	·3	...	...	...	·03	·2	·5	·06	...	·1	...	
24	...	...	...	·13	·3	·07	...	...	·07	·2	...	...	...	...	·04	...	...	...	
25	·12	·6	·03	...	·2	...	...	...	·02	...	·4	...	·1·57	·46	·2·69	·20	·11	·08	
26	...	...	·03	...	·1	...	·1	·1	·07	·1·35	·1·55	·83	·21	·19	·64	...	·4	...	
27	...	·15	·01	·5	...	·24	...	·2	...	·1·02	·67	·2·36	·2	...	·01	...	·6	...	
28	·12	·13	·11	·8	...	·16	...	...	...	...	·2	...	·15	·5	·6	...	·12	·4	·06
29	...	...	·03	...	...	...	...	...	...	·20	...	·09	·18	·16	·04	...	·1	·12	
30	·6	·2	...	...	...	...	...	...	...	...	...	...	·20	·20	...	·12	...	·02	
31	...	...	...	...	...	...	...	...	...	...	...	...	·80	·19	·28	...	...	...	
TOTAL	2·01	1·45	1·54	2·02	1·17	1·28	1·19	1·09	1·14	3·19	2·62	4·14	5·28	2·21	6·22	3·42	3·70	3·62	

continued.

[1869.]

DAYS.	July.			August.			September.			October.			November.			December.			
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
1	...	...	·17	...	·31	·17	·88	3·07	·20	·52	1·30	·32	...	·1	·21	·06	2·45	·04	
2	·45	1·05	·44	...	...	·02	·18	·27	·35	·02	1·20	·04	·12	...	...	...	...	...	
3	·60	·8	·27	...	·6	...	·10	...	...	...	...	...	·17	...	...	...	...	...	
4	·53	·6	·02	·12	...	...	·24	...	·08	...	...	...	·11	·29	·18	·09	...	·10	
5	...	...	...	·15	·24	·05	...	...	...	...	·22	...	·34	·10	·11	...	...	·33	
6	...	...	...	...	...	·02	·25	...	·56	...	...	...	...	...	...	·05	...	...	
7	...	...	...	...	...	·08	·2	...	...	...	...	...	...	...	...	...	...	...	
8	...	·4	...	...	...	·01	...	...	...	...	...	...	·25	·1	·07	3·26	·75	·04	
9	·22	·49	·32	·10	·3	·08	·4	·17	·14	...	...	...	...	...	·01	1·00	·34	·74	
10	...	·3	·05	1·13	1·66	1·64	·6	·2	·12	·02	...	·05	...	...	·30	...	...	·14	
11	·64	·63	·10	2·84	1·90	2·22	...	...	·03	·07	·18	·04	·06	·1	·17	2·20	1·23	1·24	
12	...	·11	·03	·10	·8	·11	...	...	·09	·39	·47	·35	...	...	...	·20	...	·11	
13	...	...	·11	·3	...	...	...	...	·03	·05	...	...	...	·11	·08	1·20	·15	·53	
14	·48	·1	·11	·14	·3	·12	...	·7	...	2·41	2·60	1·40	·18	·5	...	·42	·29	·26	
15	...	...	...	·4	...	·06	·33	...	·43	...	...	·09	·07	...	...	...	·3	·02	
16	...	·20	...	·1	...	·15	...	...	...	·08	·4	·07	·04	...	·27	...	·1	·02	
17	·6	...	·05	·6	...	·15	·10	·1	·02	·20	·30	·21	3·24	1·73	1·24	...	...	...	
18	·32	...	...	...	·7	·06	...	...	...	·12	·1	·17	·16	·12	·05	...	...	...	
19	...	·1	·21	·36	·3	·34	·26	...	·44	...	...	...	·04	·1	·14	...	·3	...	
20	·20	...	·02	...	...	·16	1·35	1·45	1·02	·03	...	·01	...	·2	·01	...	·3	...	
21	...	...	·4	...	·05	·6	...	·08	·29	·84	·24	·26	...	·40	...	...	...	...	
22	·54	·19	1·12	...	·1	...	...	·4	...	·80	·43	·57	...	...	...	·10	·8	·07	
23	1·70	·32	1·28	·8	·35	...	·8	·22	...	1·82	·18	1·72	·96	1·20	·31	·08	...	·01	
24	...	...	·13	·85	1·20	·30	·13	...	·39	·04	·1	...	...	·3	·05	·06	...	·21	
25	...	...	...	·10	·5	·17	·27	·40	...	·42	·11	·07	·18	1·20	·94	·10	...	·24	
26	·12	·10	·08	...	·39	...	·4	...	·43	...	·35	·04	·10	...	...	·04	·2	·17	
27	·4	...	...	...	...	...	1·11	4·56	...	...	·20	1·81	·04	...	...	...	·37	·09	
28	·5	...	...	...	...	...	...	...	...	...	4·10	...	...	...	...	·2	...	...	
29	·34	·26	·23	...	...	·02	·20	...	...	...	·12	·1	·25	...	·1	...	·10	·19	·09
30	·10	·1	·02	·20	·11	·20	...	...	...	·6	·3	·04	...	·5	·10	...	·1	...	
31	...	·1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
TOTAL	6·49	3·60	4·76	6·35	6·52	6·18	5·80	10·28	4·41	7·46	12·58	7·49	6·32	4·95	4·64	9·14	6·00	4·45	

## APPENDIX 19—

1870.]

Days.	January.			February.			March.			April.			May.			June.			
				A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
		A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	.25	.25	.17	.03	.3	...	...	...	...	...	.02	...	...	...	...	...	...	...	...
2	...	...	...	.04	...	.06	...	...	...	.01	...	...	...	.02	...	...	2.56	.87	3.16
3	.03	.14	.32	.01	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.02
4	...	.17	...	...	.1	.10	...	...	...	...	.2	.06	.15	.32	.75	...	...	...	...
5	.18	.5	...	...	.23	...	...	...	...	...	...	...	...	...	...	.10	...	.10	...
6	.05	...	...	...	...	...	...	...	...	.19	...	...	...	...	...	.20	.9	.04	...
7	.8	...	.38	.19	...	...	.04	.1	...	.22	...	.10	...	...	.50	.7	.45	...	...
8	.10	.5	...	.28	.10	.06	.16	.15	...	...	...	...	...	...	...	.08	.14	.01	...
9	.13	.1	.05	...	...	...	.10	...	...	.06	.4	.01	...	...	...	.08	.16	...	...
10	.60	1.30	.60	...	.2	.09	.24	...	.22	...	.1	...	...	...	...	.22	.5	...	...
11	.14	.30	.31	.17	...	...	...	.2	...	...	...	...	...	...	...	.30	...	...	...
12	.28	.39	.37	.16	...	...	.08	...	.02	...	...	...	...	...	...	.02	...	.03	...
13	.74	.40	.08	...	...	...	...	...	.02	...	...	...	...	...	.10	...	.14	.13	...
14	.15	.1	.06	...	.37	.17	.12	...	...	.19	...	.15	1.20	...	.25	1.38	.42	...	...
15	.13	.60	.38	...	...	.20	...	.9	.10	...	...	...	...	...	.03	1.27	.4	.97	...
16	...	...	...	...	.9	...	...	...	...	...	...	...	...	.17	...	.24	.27	.05	...
17	.23	.25	.23	.08	.1	.04	...	.4	...	.15	...	.10	.12	.35	...	.10	...	.33	...
18	.12	.5	.27	.10	.3	.09	...	.1	...	.34	.18	.87	.22	...	.07	.10	.1	.07	...
19	...	.13	.02	.23	.5	.10	...	...	...	...	...	...	...	...	...	.68	...	...	...
20	...	...	.04	.19	.16	.31	...	...	...	.12	.1	.02	.94	.10	.12	...	...	.08	...
21	...	.3	...	.10	.5	.05	...	...	.08	.20	.6	.07	.08	.31	.17	...	.12	...	...
22	...	...	.02	...	...	...	.10	...	.02	...	...	...	...	.10	.1	.05	.30	.10	.12
23	.25	.11	.13	.02	.3	.11	...	...	...	...	...	...	...	...	.36	.16	.32	.06	.90
24	...	...	.08	...	...	...	...	...	...	...	...	...	...	...	.26	.9	.39	1.45	9.00
25	.72	.26	.26	...	...	...	...	...	.10	...	.1	...	...	.04	.7	.05	5.34	.2	3.13
26	...	.11	.13	.02	...	...	...	.1	...	...	...	...	...	...	.12	.13	.6	.11	...
27	.14	.13	.12	.10	...	...	...	...	...	...	.13	...	...	...	.06	...	.09	.10	.05
28	...	.1	.10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.6	...
29	...	.1	.06	...	...	...	...	.03	...	.06	...	...	...	...	1.32	1.49	.34	...	.10
30	.03	...	...	...	...	...	...	...	...	...	...	...	...	...	.22	.23	.04	.16	...
31	.22	.2	.06	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL	4.57	4.78	4.34	1.72	1.18	1.38	.87	.33	.81	1.23	.52	1.25	4.04	4.50	2.64	13.56	13.59	10.66	

*continued.*

[1870.]

Days.	July.			August.			September.			October.			November.			December.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	1	.03	...	...	.23	.04	.12	.17	.13	...	.84	...	...	...	1.29	.45	.48
2	...	...	...	...	...	...	.74	1.50	.03	...	.69	...	.06	.1	.25	...	.5	...
3	.17	.5	.17	.03	.1	.77	.01	...	...	.11	...	.25	...	.4	...	...	...	...
4	...	.68	...	.53	.34	.18	.30	...	...	...	.2	.07	.62	.49	...	.01	...	...
5	.06	...	...	1.06	.35	.93	1.78	.88	.67	.05	.2	...	.10	...	...	...	.13	...
6	.03	.1	.04	...	.2	...	.02	2.30	.08	.16	...	.03	.04	...	...	.06	.10	...
7	...	...	...	.03	.2	.07	...	...	.07	1.90	1.81	1.01	...	...	...	...	.1	...
8	.07	.1	.02	.57	.24	.29	.49	.17	...	.08	...	...	...	...	...	...	...	...
9	.02	.7	.19	.21	.5	.03	.09	...	...	1.92	.71	1.72	...	.45	...	.02	...	.22
10	2.88	1.61	2.20	.08	.83	.25	...	...	...	...	...	.06	...	...	.16	.01	...	.65
11	...	.2	...	...	...	...	...	...	...	.04	...	.05	...	...	.01	.2	...	...
12	.06	...	.05	...	...	.10	...	...	...	...	...	...	.39	.45	.09	.01	.32	.01
13	.22	.6	.15	.25	.25	.05	.07	...	...	...	...	...	...	...	...	...	...	...
14	.38	.25	.20	.07	.32	.19	...	...	...	.10	.31	.02	.23	.9	.20	.01	.6	.06
15	.42	.26	.31	.39	.13	.19	.05	.11	...	.21	.12	.09	.02	...	.10	.02	.4	...
16	.38	.68	.13	.02	...	...	...	...	...	.43	.70	.76	...	.21	.16	...	...	...
17	.18	.15	.04	...	...	.12	.92	.55	.15	.46	.66	.16	.06	...	.18	...	...	...
18	.03	...	.24	1.88	1.80	.71	.04	...	.05	.93	.60	.42	...	...	.12	...	.10	...
19	...	...	.13	.32	.19	.85	...	.15	...	1.11	.45	.36	...	...	...	.1	...	...
20	.18	.16	.05	...	...	...	.05	.9	.04	.11	.26	.90	...	...	.13	.03	.10	.11
21	...	...	.03	...	...	...	.20	.5	.13	.87	.39	.22	.15	.12	.22	.43	.25	.41
22	...	...	...	.24	.70	.08	...	...	...	.98	.13	.12	...	.12	.07	.14	.18	.16
23	.13	.19	...	...	...	...	...	...	...	.52	3.00	.21	.08	.27	...	.42	.23	.32
24	.37	.28	.29	.05	.14	.32	...	...	...	2.62	1.30	2.13	.10	.59	.14	...	.04	...
25	.33	.18	.56	...	3.32	...	.15	...	.14	...	...	1.97	.95	1.53	...	...	.03	...
26	.01	.1	.13	...	...	.07	.28	.6	.41	...	...	...	2.72	1.05	1.80	.04	...	.14
27	...	...	...	...	...	.02	.32	.13	.84	...	...	...	1.20	.54	1.36	...	...	...
28	...	...	...	...	...	...	.35	.3	.04	...	.3	...	1.00	.10	.53	.15	...	.03
29	.10	.5	.16	.02	.28	...	.07	.4	.20	.02	...	...	.40	.3	.07	.12	.72	.25
30	.34	.30	.39	.15	...	.01	.09	.1	.18	.69	.8	.05	.28	.25	1.12	.60	.15	.40
31	.08	...	.05	.03	.5	.11	...	...	...	1.39	1.64	.83	...	...	...	.83	.74	.29
TOTAL	6.44	5.03	5.56	5.93	9.04	8.07	6.06	6.19	3.20	14.83	12.92	10.00	9.42	5.76	8.11	4.32	3.56	3.70

1871.]

## APPENDIX 19—

DAYS.	January.			February.			March.			April.			May.			June.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	.26	.21	.07	.58	.67	.33	...	.1	.01	.08	...	...	.01	...	...	.16	.17	...
2	...	...	...	.09	.3	...	...	...	...	...	...	.02	...	.1	...	.03	...	...
3	.05	...	.02	.06	.5	.13	.10	...	.04	.08	.1	.25	.04	.3	...	.04	.6	...
4	.04	...	...	.15	.1	.15	...	.2	...	...	.7	...	.05	...	.05	...	...	.13
5	...	.1	...	.22	...	.04	...	...	...	...	...	...	.9	.01	.18	...	...	...
6	.10	...	.05	.22	...	.04	...	...	.04	.09	...	...	...	...	...	.20	.1	.02
7	.02	...	...	.01	...	...	...	...	...	.04	.1	...	...	...	...	.05	.16	.11
8	...	...	...	...	...	...	.05	...	...	...	...	.02	...	...	...	.70	.20	.67
9	...	...	...	...	...	...	.34	...	...	...	...	.02	.01	...	...	.01	.39	.32
10	.11	...	.02	.05	.11	...	.24	.51	.18	...	...	...	...	...	...	...	...	.05
11	.16	.15	.30	.13	.5	.10	...	...	...	.03	...	...	...	...	...	.12	...	...
12	.82	.49	.36	.11	.6	.03	...	...	.03	...	...	...	...	...	...	...	.3	...
13	.17	.3	.47	.22	.4	.34	...	...	...	...	...	.03	...	...	...	.06	.16	.07
14	.55	.50	.22	...	...	...	...	...	...	.02	...	...	...	...	...	...	...	.02
15	.33	.19	.64	.07	.5	.09	.10	...	.22	...	...	...	.12	...	...	.02	...	...
16	.21	.60	.50	.08	.10	.11	.11	.9	.15	...	...	...	...	...	...	.06	.12	...
17	.02	.20	.08	.26	.9	.30	.04	...	.10	.03	...	...	...	...	...	.02	.04	...
18	.03	...	...	.02	.3	...	.08	.71	...	.05	...	.03	.22	...	.09	.10	.11	...
19	.20	.5	.20	...	...	...	...	.1	...	.17	...	...	...	...	...	.04	.29	.04
20	.09	.3	.03	...	...	...	...	...	...	.14	...	.17	...	...	...	...	.2	...
21	.28	.40	.08	...	.1	...	...	...	...	...	...	.01	...	...	...	...	...	...
22	.08	.8	...	...	...	...	...	...	...	...	...	.5	...	...	...	...	.16	.13
23	.04	.2	...	.15	.9	.04	...	...	.01	...	...	...	.06	...	.12	.07	.1	...
24	.32	.12	.19	.54	.5	.76	.10	.35	.06	...	...	.02	.11	.78	.21	.21	.20	.41
25	.10	.4	.17	.01	.1	...	.01	.5	.05	...	...	.07	.04	.2	.30	.01	...	...
26	.25	.69	.26	...	...	...	...	.2	...	...	...	...	...	.2	.03	.27	.11	.43
27	.09	.5	.01	.03	...	...	...	...	...	...	...	.04	...	...	...	...	...	...
28	.38	.32	.18	...	.6	...	.07	...	...	...	...	...	.15	.35	.16	.17	.1	.20
29	.04	...	...	...	...	...	...	...	...	.36	...	.07	.05	...	...	...	...	...
30	.05	.11	.10	...	...	...	...	...	...	...	...	...	.01	...	...	.13	.15	.16
31	.21	.5	.13	...	...	...	...	...	...	...	...	.04	.3	...	...	...	...	...
Total	5.00	4.34	4.08	3.00	1.51	2.46	1.24	1.77	.89	1.09	.14	.75	.91	1.33	.99	3.67	2.36	2.84

*continued.*

[1871.]

DAYS.	July.			August.			September.			October.			November.			December.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	-2	...	-05	...	...	-13	-36	-75	-25	...	-21	-07	...	...	...	...	...
2	-60	-99	-85	-23	-20	...	...	...	...	-14	...	...	-09	-4	-08	...	...	-09
3	-07	-5	-10	-34	-1	-07	...	-9	...	-02	...	...	-11	-30	-25	-09	-6	...
4	-10	-18	...	-67	-84	-1-06	-23	...	-38	-16	...	-28	-04	...	-22	-02	-40	-06
5	-46	-7	-06	-03	-18	-14	-75	...	-10	-08	...	-21	...	...	...	...	...	...
6	-05	-9	-12	...	...	-13	-07	...	-17	-06	-2	-11	...	...	-05	...	-10	...
7	-04	-26	-14	-16	-13	-26	...	...	-05	...	-17	-11	-02	1-26	-08	1-63	1-11	1-24
8	...	...	...	-38	...	-10	-25	-12	-43	-04	...	...	-01	-19	-04	-01	...	...
9	...	...	...	-01	-16	3-15	-03	-30	-5	-01	-03	...	-78	-01	-20	-03	-21	-16
10	-12	...	-05	-10	...	-11	...	-10	-06	-56	-2	-12	-11	-5	-33	-13	...	-04
11	-06	-2	-16	-22	-7	-21	-71	-72	-81	-16	-64	...	1-14	1-12	1-24	-50	-85	-62
12	-14	-2	...	-10	...	...	-36	-67	-02	-23	-22	-07	-04	-3	-22	1-13	-24	-51
13	...	...	...	1-04	1-54	-61	...	1-20	-06	-50	-16	-04	...	-24	...	...	...	...
14	-44	-20	-35	...	-31	...	2-77	...	-62	-92	-48	-56	...	...	...	-1	-04	...
15	-20	-20	-30	-34	-5	-07	...	...	-30	-26	-5	-18	...	...	...	...	...	...
16	-10	...	...	-41	...	-03	-23	-33	-31	-24	-68	-24	-02	-3	...	-02	...	-05
17	-01	...	...	...	...	...	-01	...	-16	-93	-50	-33	-02	...	-17	-04	-5	-06
18	...	-3	...	-02	...	...	-18	-15	-03	-16	-6	-44	...	...	-09	-4	-09	...
19	-28	-17	-23	...	3	...	-76	-40	-33	-18	-3	-07	-10	-3	-03	-10	...	-08
20	...	-1	-19	-03	-17	...	...	-10	-04	...	-9	-03	...	-1	...	-21	-9	-05
21	-13	-8	...	-20	-10	-29	...	...	...	-14	-1	...	-23	-15	-39	-11	-20	-10
22	...	...	...	...	...	-24	-13	...	-15	-25	...	...	-31	-8	-18	-15	-21	-11
23	...	...	-03	-22	-9	-14	...	...	1-10	-83	3-36	...	...	-02	...	...	-02	...
24	-14	...	-15	-26	-5	-10	...	...	...	-23	-15	...	-12	-16	-05	...	...	...
25	-12	...	-26	-53	-11	1-09	-74	...	1-79	-25	-21	-13	-51	-2	-11	...	...	-10
26	-30	-2	...	-13	-3	-28	-02	-11	...	-04	...	...	-01	-24	-17	-08	...	-08
27	-67	-65	-05	...	1-47	...	...	...	...	...	...	...	-17	...	-26	...	...	...
28	-16	-2	-06	-08	...	...	...	-7	-05	...	...	...	...	...	-44	...	1-03	...
29	...	...	-23	...	-41	-14	-89	-17	-56	...	...	-13	...	-12	-10	-1	-10	...
30	-15	...	-07	-39	-45	-26	-18	-17	-41	-06	-18	-02	-55	-38	...	...	...	...
31	...	-1	-08	-30	-21	1-33	...	...	...	-01	-3	-04	...	...	...	...	...	...
TOTAL	4-34	3-09	3-49	6-39	9-60	5-69	8-71	4-81	7-49	7-00	4-53	7-33	3-81	4-53	3-99	5-11	3-43	4-87

## APPENDIX 19—

1872.]

DAYS.	January.			February.			March.			April.			May.			June.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	...	...	5	...	4	...	...	...	...	...	...	2	...	...	10	9	13
2	5	...	...	1	...	...	...	...	8	...	...	...	...	...	...	...	...	1
3	15	...	14	7	...	2	...	...	...	...	...	...	...	...	...	...	...	...
4	15	16	7	39	62	25	...	...	...	5	...	5	8	...	...	9	...	5
5	45	4	17	40	18	...	1	...	...	...	...	...	12	5	12	14	1	...
6	12	11	10	73	32	17	4	...	1	...	...	...	12	...	52	13	35	9
7	6	...	5	19	4	50	5	...	...	21	...	33	21	35	5	23	24	7
8	02	...	4	7	7	2	...	...	...	37	...	24	...	...	...	5	...	...
9	...	...	6	4	...	9	...	...	...	...	...	...	...	...	9	...	...	39
10	25	36	77	82	70	22	...	...	...	15	...	2	...	...	...	...	1	...
11	04	...	1	9	2	18	...	...	...	...	...	6	...	...	...	7	...	6
12	...	05	21	2	1	16	3	...	...	2	...	...	...	...	...	...	1	21
13	...	...	57	105	32	7	5	1	11	...	6	...	...	...	...	...	...	24
14	...	...	43	15	23	8	...	...	6	...	...	...	27	5	...	14	7	...
15	...	...	18	...	06	3	5	38	...	...	3	...	2	...	11	...	3	...
16	...	...	...	...	...	...	5	...	4	...	...	...	...	...	...	...	5	...
17	14	...	1	...	...	7	3	2	2	...	5	...	...	3	9	32	6	...
18	14	18	...	3	...	32	13	...	4	4	...	5	...	...	...	...	...	...
19	07	2	...	...	...	03	21	2	16	...	...	3	...	3	18	5	25	...
20	5	2	4	...	...	...	14	7	12	...	...	...	...	...	...	6	15	...
21	9	2	...	...	...	...	...	...	3	24	7	16	...	...	116	160	106	...
22	...	...	1	...	...	9	11	17	14	...	...	2	8	...	...	6	5	3
23	29	5	5	...	...	...	8	22	...	...	...	14	...	...	...	...	...	...
24	26	...	...	...	...	...	19	15	6	...	...	3	...	...	...	...	...	...
25	10	...	2	...	...	19	1	6	...	...	...	...	...	54	...	...	...	...
26	...	...	1	...	...	6	1	4	...	...	...	2	37	3	16	120	8	...
27	...	...	...	...	...	10	...	14	9	...	...	3	5	...	...	...	...	...
28	5	3	3	...	...	3	...	2	19	...	66	17	...	2	...	10	23	...
29	18	...	30	1	...	24	...	16	5	...	...	27	...	19	28	...	...	...
30	2	...	...	...	...	1	...	...	1	...	...	26	47	54	...	...	...	...
31	...	...	...	...	...	...	...	...	...	...	...	...	23	...	...	...	...	...
TOTAL	2.68	1.04	2.06	4.13	3.16	2.70	1.92	.78	1.50	1.85	-10	1.73	1.56	1.83	2.21	2.85	4.23	3.26

*continued.*

[1872.]

DAYS.	July.			August.			September.			October.			November.			December.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	...	...	...	...	...	33	...	...	...	...	...	1	...	5	1	...	...	...
2	...	...	...	...	2	...	...	...	3	...	...	10	...	15	56	...	5	29
3	-53	...	...	...	14	58	...	...	57	...	32	46	...	...	6	...	32	11
4	-16	27	-21	...	...	...	...	6	...	...	10	10	...	...	...	2	10	
5	31	...	...	...	...	...	...	...	...	...	14	...	73	137	...	8	18	
6	...	18	7	...	...	09	...	3	5	...	11	56	...	40	44	...	...	08
7	...	...	39	...	...	15	...	4	3	...	...	24	...	...	...	2	1	
8	-30	7	-25	...	42	07	...	39	539	...	51	...	...	14	07	...	...	
9	38	16	42	...	14	...	208	262	...	...	...	...	...	...	2	...	5	6
10	...	...	...	1	...	...	...	03	...	...	27	24	...	63	9	...	...	12
11	...	...	4	...	03	...	1	...	...	...	68	...	...	25	100	...	...	...
12	...	...	26	...	30	41	...	1	...	...	3	...	...	1.50	23	...	...	...
13	36	...	...	9	...	...	...	5	...	...	02	...	1.10	11	...	1	14	
14	...	...	5	...	9	77	...	4	...	...	...	...	...	14	19	...	...	6
15	16	...	19	...	4	03	...	25	...	15	20	...	...	...	...	...	...	...
16	15	3	6	...	24	23	...	1	11	...	19	...	...	7	...	...	...	9
17	48	...	12	...	12	31	...	...	...	1	1.16	...	5	23	...	...	2	
18	11	38	...	...	16	05	...	7	...	...	...	...	40	69	...	...	...	
19	...	11	...	...	8	10	...	...	...	...	...	...	1.74	1.63	...	3	33	
20	-2	5	...	...	...	12	...	2	02	...	...	...	14	35	...	...	10	
21	6	...	...	...	3	...	...	7	7	...	...	...	5	19	...	31	4	
22	1	...	...	...	13	29	...	2	33	...	...	...	5	25	...	4	11	
23	1	...	...	...	...	04	...	3	...	...	05	...	15	24	...	14	2	
24	...	...	...	...	...	...	...	6	...	...	...	...	36	16	...	5	44	
25	...	...	...	...	...	29	...	20	47	...	35	30	...	10	10	...	26	2
26	...	...	...	...	5	27	...	1	2	...	1.05	10	...	15	28	...	16	8
27	...	1	3	...	5	...	...	16	...	...	...	...	17	15	...	11	6	
28	14	...	7	...	...	...	7	36	...	...	...	...	1	...	...	16	35	
29	7	...	5	...	5	10	...	05	...	...	...	...	3	...	41	65		
30	...	...	...	...	...	...	...	11	...	20	9	...	29	...	2.63	4.01		
31	-17	19	15	...	1	29	...	...	...	13	62	...	...	...	13	27		
TOTAL	3.42	1.45	2.36	...	2.03	4.69	...	3.25	10.69	...	3.91	4.58	...	8.46	8.81	...	4.98	7.74

## APPENDIX

*Annual Average Rainfall of 57 Stations from which Records have been*

YEARS.	Windward Highland.										Central		
	St. Joseph.		St. John.		St. Peter.								
	Springfield.	Binsfield.	Saltrem.	Castle Grant.	Guinea.	Colleton.	Clifton Hall.	Pool.	Henley.	Haynesfield.	Nicholas	Welch Town.	
											Abbey.		
1843													
4													
5													
6													
7													
8													
9													
1850													
1	65·79												
2	75·54												
3	61·82	84·39											
4	39·27	53·79											
5	66·37	95·											
6	46·54	56·74		55·68									
7	47·23	67·66											
8	37·23	55·90		58·65		32·31			49·17	56·24			
9	44·50	56·72		55·83		42·32		51·58	58·59	59·38			
1860		63·18		61·59		49·04		59·08	63·84	65·16			
1		90·81		98·81		73·16		74·81	73·60	95·44			
2		62·39				44·59		56·55	59·67	56·79			
3		56·12				22·07		44·21	48·90	30·69			
4		64·03				55·21	54·15	62·08					
5		76·90			69·06		66·15	65·63	68·10		80·94	81·58	
6		65·59			56·29		57·76	54·89	59·05		55·80	60·35	79·54
7		85·76	86·42		67·65		71·74	64·67	69·56		71·88	76·39	97·15
8		55·85	56·67		47·24		47·18	44·91	57·70		42·73	45·27	65·95
9		58·67	58·65		43·03		46·40	48·68	51·25	45·00	46·10	48·97	65·56
1870	62·84	72·98	73·64		63·22		61·25	63·10	66·24	68·70	65·21	59·57	72·89
1		50·27			42·20	36·96	40·21	43·43	48·67	55·45	38·22	33·56	52·11
Average of whole periods .	67·34			55·53		55·74	55·78	59·88			57·29	57·95	72·20
Of broken periods .	50·73		68·84	66·17	42·92				62·22				

## No. 21.\*

*received for different periods, with averages of the several Stations, from 1843 to 1871.*

Highland.				Leeward Lowland.				St. James.				St. Michael.				Years.													
St. Thomas.		District D.		Dukes.		Mount Hilsby.		Husbands.		St. Lucy.		District E.		Sion Hill.		Westmore-land.		Holders.		Lascelles.		Carlton.		Pine.		Grand View.		Bush Hall.	
54.91	...	67.74	...	43.61	54.55	47.82	...	47.22	...	58.93	...	49.86	...	56.07	...	67.32	...	Husbands.	St. Lucy.	...	...	...	...	...	...	...	...	...	1843
78.30	...	97.34	...	74.89	67.04	69.22	...	58.33	...	73.50	...	60.24	73.95	66.20	98.83	41.50	45.83	66.54	...	...	...	...	...	...	...	...	...	...	4
43.13	...	58.33	...	...	...	47.12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	
64.21	...	75.91	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	
47.82	...	57.26	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	
64.01	67.14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	
...	68.83	...	...	...	...	...	...	55.60	57.40	...	79.81	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	
...	72.07	...	...	...	...	...	...	...	...	85.35	...	84.40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
...	64.26	...	...	...	...	...	...	...	...	64.61	...	96.42	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	
...	44.33	42.71	...	41.81	...	39.69	...	...	63.81	...	...	...	...	...	...	...	...	58.34	33.47	32.40	...	...	...	...	...	...	...	3	
75.67	...	65.32	...	71.23	...	64.17	...	71.76	...	79.79	82.17	...	...	...	...	...	74.81	49.47	49.10	...	...	...	...	...	...	...	...	4	
95.09	...	87.57	...	75.	...	72.84	...	...	...	...	...	...	...	...	...	...	81.80	59.42	54.97	51.60	...	...	...	...	...	...	...	5	
82.62	...	78.35	...	66.98	...	52.15	...	63.34	67.95	...	...	...	...	...	...	...	72.80	54.08	51.38	50.29	...	...	...	...	...	...	...	...	6
93.90	...	89.41	...	69.85	...	68.67	...	79.31	84.80	...	...	...	...	...	...	...	75.14	57.99	55.28	52.30	...	...	...	...	...	...	...	...	7
65.68	...	66.50	...	46.73	...	41.95	...	55.32	55.84	37.95	41.67	53.31	...	...	...	...	39.32	34.53	...	...	...	...	...	...	...	...	...	8	
64.16	...	63.75	...	49.08	48.39	56.17	...	60.73	58.89	39.78	49.37	65.52	...	...	...	...	43.71	41.36	...	...	...	...	...	...	...	...	...	9	
84.75	...	75.77	...	...	60.88	67.40	Average f210.	75.06	66.38	55.39	51.61	83.54	44.54	45.34	41.61	...	...	...	...	...	...	...	...	...	...	...	...	1870	
58.47	...	58.99	...	...	...	40.41	38.22	48.53	46.38	39.16	45.87	56.54	32.73	30.90	33.56	...	...	...	...	...	...	...	...	...	...	...	...	1	
77.74	...	69.28	...	...	...	58.55	...	73.00	65.60	43.06	47.13	68.63	...	...	...	...	48.88	43.59	...	...	...	...	...	...	...	...	...	...	
...	56.67	...	71.32	60.11	57.17	...	52.10	...	...	...	...	...	...	...	...	...	47.39	...	...	...	...	...	...	...	...	...	...	...	

\* For Appendix No. 20 see page 114.

## APPENDIX No. 21—

YEARS.	Central Lowland.												Three Houses.	Fairfield.	Bushy Park.
	St. Thomas.				St. George.				Wentworth.						
	Hopewell.	Edgehill.	Ridgeway.	Buttals.	Endeavour.	District B.	Egerton.	Walkers.	Valley.						
1843															
4													45·31		
5													74·45		
6													43·91		
7													62·69		
8													42·48		
9													62·85		
1850													53·04		
1													63·77		
2															
3															
4															
5															
6															
7															
8															
9															
1860															
1															
2															
3															
4	71·00	59·90			41·38	45·18		40·16					36·79		
5	72·71	55·79			64·18			56·24					42·16		
6	67·90	58·87			69·31			62·96	61·62	67·18			61·87		
7	70·89	55·70	78·92		66·93	65·75	70·29	69·00	64·28				61·96		
8	51·22	37·34	53·38	44·48	44·61		38·71	37·30	39·29				33·93		
9	55·20	44·19	53·27	45·01	46·92		39·49	46·75	51·08	41·35			37·23		
1870	66·05	56·41	64·52	53·58	57·26		45·86	54·06	53·40	54·97	51·72	48·66			
1	47·68	39·21	50·60	48·82	45·80		44·68	41·13	43·90	35·96	36·22	33·43			
Average of whole periods	62·83	52·30	60·12	46·72	58·13			53·36	52·40	51·39			45·37		
Broken periods	..	..	..	..	..	53·63	52·84	..	..	..	53·64	..			

*continued.*

### **Southward Lowland.**

St. Philip.								Christ Church.							
Oughtersons.	Thurhams.	Marchfield.	Dodds.	Chapel.	Carrington.	Halton.	Edgecumbe.	Woodburne.	Lowthers.	Pilgrim.	Balls.	Bannatyne.	Emerald.	St. Ann's.	
45-79	57-24	58-13	69-60	42-40	68-58	45-59	48-59	45-33	54-44	53-22	57-53	53-58	55-33	46-92	
62-36	58-13	69-60	42-40	42-01	48-59	45-59	48-59	54-33	53-22	50-84	49-94	50-84	44-82	68-61	
38-71	42-40	42-40	42-01	42-01	42-01	42-01	42-01	42-01	42-01	42-01	42-01	42-01	42-01	46-88	
63-24	42-11	45-59	45-59	42-01	51-80	57-50	55-49	50-84	55-08	52-51	46-01	45-17	44-46	62-07	
52-19	55-66	54-33	54-44	53-22	57-53	53-58	53-58	50-84	50-84	50-84	50-84	50-84	41-20	37-40	
35-42	67-93	76-17	76-17	70-01	70-61	65-20	71-07	62-02	74-60	59-09	59-09	59-09	41-32	45-51	
54-29	67-74	54-24	54-24	57-52	58-86	51-06	54-66	51-24	55-52	36-08	37-62	35-60	35-60	43-00	
42-11	41-14	42-99	42-99	43-57	42-92	36-46	45-27	36-60	36-36	42-86	35-88	35-88	35-88	42-70	
47-89	51-08	51-08	51-08	54-46	56-36	50-47	57-22	48-67	48-67	52-54	46-04	50-75	44-96	59-07	
65-49	65-49	67-74	67-74	59-25	68-60	61-32	68-71	59-68	59-49	57-87	51-53	51-15	42-48	57-24	
53-98	59-28	59-28	59-28	56-01	57-27	55-36	59-29	49-75	49-75	57-89	48-35	49-01	62-29	52-71	
65-14	65-14	67-57	67-57	66-20	68-59	68-24	68-56	61-28	64-40	60-97	55-84	64-39	56-63	45-63	
40-94	40-94	40-74	35-63	45-82	45-46	36-65	50-04	41-79	35-89	34-72	29-48	34-48	41-85	76-38	
40-17	49-13	38-44	38-44	51-32	50-08	45-21	49-85	39-30	34-25	40-55	40-22	42-27	48-18	30-54	
58-09	58-67	62-13	61-74	55-40	59-72	53-76	41-89	46-76	55-39	47-13	53-78	45-83	42-85	39-20	
43-35	49-19	41-55	46-97	42-33	45-02	42-02	46-79	42-85	38-83	38-33	38-66	43-49	37-94	45-72	
51-58	55-93	...	56-46	56-60	50-80	56-53	50-98	...	44-10	47-23	52-96	43-17	48-31	43-70	
...	49-88	...	...	...	...	...	...	48-76	47-36	...	...	...	...	35-15	

## APPENDIX No. 20.

*Statement of the Average Number of Days and Nights on which Rain fell in each Month at Binfield, St. Joseph's, Barbados, 1,064 feet above the Sea, and of the Average Quantity which fell during Day and Night respectively, with the Percentage Proportion both of the Number and Quantity, during the eighteen Years from 1854 to 1871.*

Months.	Average Number of		Average Quantity in inches.		Percentage Proportion of				Difference in Excess of Percentage Proportion of Quantity.	
					Number.		Quantity.			
	Days.	Nights.	Days.	Nights.	Days.	Nights.	Days.	Nights.	Days.	Nights.
January ...	8.2	14.7	1.69	2.11	36.1	63.9	44.4	55.6	...	11.2
February ..	7.5	11.7	1.48	1.64	39.2	60.8	47.4	52.6	...	5.2
March .....	4.8	7.5	.69	1.03	39.3	60.7	40.1	59.9	...	19.8
April .....	5.4	7.2	1.15	1.40	43.2	56.8	45.3	54.9	...	9.8
May.....	5.9	9.7	1.87	1.96	37.7	62.3	48.7	51.3	...	2.6
June .....	8.9	13.2	3.38	3.15	40.3	59.7	51.7	48.3	3.4	...
July.....	10.8	14.1	3.48	3.27	43.	57.	51.5	48.5	3.0	...
August ...	10.1	15.4	4.22	3.52	39.4	60.4	54.5	45.5	9.0	...
September ..	9.8	15.	3.79	3.42	39.5	40.5	52.5	47.5	5.0	...
October ...	12.2	14.5	5.01	4.46	42.5	57.5	52.9	47.1	5.8	...
November ..	10.2	15.1	4.08	3.96	40.8	59.7	50.7	49.3	1.4	...
December ..	8.7	13.3	2.57	2.68	39.5	60.5	48.9	51.1	...	2.1
Total .....	102.5	153.4	33.41	32.60	Quantity in inches.	Dec. to Juneto Nov.	Days 9.45 May. 10.82 Jun. 23.96 Nov. 21.98	Nights 10.82 Days 23.96 Nights 21.98	Excess of night 1.37 Excess of day 1.98	

## APPENDIX No. 22.

*Average Annual Rainfall in Inches, of 96 Stations, for the years 1870 to 1872.*

Districts, Parishes, Stations.	1870	1871	1872	Districts, Parishes, Stations.	1870	1871	1872
<b>I. BELOW CLIFF.</b>							
<i>St. Andrew.</i>							
1. Seniors .....	82.58	...	...	28. Ellis Castle.....	...	...	...
2. Greenland.....	62.68	32.81	38.79	29. Apes Hill .....	...	42.17	47.53
3. Turner Hall.....	...	32.38	41.18				
<i>St. Joseph.</i>							
4. Mount Dacres .....	61.26	35.64	48.95	30. Bloomsbury .....	...	39.66	62.97
5. Joe's River .....	...	36.46	54.56	31. Farmers .....	...	46.99	59.40
6. Bissex Hill .....	...	38.13	46.22	32. Mangrove Pond .....	69.76	51.91	55.09
7. District F. ....	...	36.56	50.58				
<i>St. John.</i>							
8. Codington College ...	...	37.77	47.49	33. Woodland .....	65.69	46.72	...
9. Qyntynes.....	...	34.96	47.05	34. Greens .....	...	50.99	57.66
10. Newcastle.....	50.47	33.26	39.15	35. The Mount .....	62.01	...	55.25
<b>II. ABOVE CLIFF.</b>							
<i>St. Joseph.</i>							
11. Malvern .....	...	43.59	56.49				
12. Horsehill .....	74.26	51.19	...	38. Philip.....	...	38.94	43.07
13. Blackman's .....	74.32	55.47	66.74	40. Mount Pleasant .....	...		
14. " Yard.....	79.06	56.74	64.20				
15. Little Island.....	72.18	56.88	74.53				
16. Retreat.....	...	53.81	66.78				
17. Spa .....	...	47.45	63.53	39. Lucy.....	...	34.45	28.62
<i>St. John.</i>							
18. Stewart's Hill .....	58.74	38.05	45.41	41. Lamberts .....	59.08	32.77	25.36
19. Cliff .....	65.26	46.26	52.96	42. Lowland .....	55.60	30.09	27.16
20. Hill View.....	...	45.27	52.21	43. Collyns .....	...	29.93	29.49
21. Ashford .....	65.68	47.86	55.25	44. Hope.....	...	59.11	30.62
22. Risque .....	62.54	47.82	57.01	45. Springhall.....	...	28.24	28.39
23. Kendal .....	...	45.12	56.08	46. Bright Hall .....	58.37	30.63	33.17
24. Hothersal.....	...	46.49	57.52	47. Trents .....	...	31.45	35.18
25. Edgecliffe .....	68.57	44.66	55.36	48. Crab Hill.....	...	34.4	43.56
26. Sherbourne .....	64.51	46.25	56.97	49. Alleynedale .....	68.82	49.94	38.17
27. Todds .....	70.42	52.64	63.88	50. Warleigh .....	71.22	38.93	45.73
<i>St. Peter.</i>							
<b>III. CENTRAL HIGHLAND.</b>							
<i>St. Peter.</i>							
28. Ellis Castle.....							
<i>St. James.</i>							
29. Apes Hill .....							
<i>St. Thomas.</i>							
30. Bloomsbury .....							
31. Farmers .....							
32. Mangrove Pond .....							
<i>St. George.</i>							
33. Woodland .....							
34. Greens .....							
35. The Mount .....							
36. Lemon Arbour.....							
37. Redland .....							
38. The Hope .....							
39. Cottage .....							
<b>IV. LEEWARD LOWLAND.</b>							
<i>St. Lucy.</i>							
41. Lamberts .....							
42. Lowland .....							
43. Collyns .....							
44. Hope .....							
45. Springhall .....							
46. Bright Hall .....							
47. Trents .....							
48. Crab Hill .....							
<i>St. Peter.</i>							
49. Alleynedale .....							
50. Warleigh .....							
<i>Bakers.</i>							

APPENDIX No. 22.—*continued.*

Districts, Parishes, Stations.	1870	1871	1872	Districts, Parishes, Stations.	1870	1871	1872
<i>St. Peter—continued.</i>							
52. Maynards .....	64.31	37.08	39.16	VII. SOUTHWARD LOWLAND.			
53. District E. ....	...	38.22	43.39	St. Philip.			
54. Gibbs .....	...	36.65	48.11	74. Bayleys.....	48.49	28.82	37.93
55. Six Men's.....	...	48.99	45.74	75. Golden Grove .....	...	27.58	...
<i>St. Michael.</i>							
56. Sherbourne .....	47.58	41.08	47.58	76. Maps .....	45.67	29.49	38.39
57. Mount Clapham .....	41.29	34.42	38.60	77. Wiltshire .....	53.09	35.28	42.64
58. St. Leonards .....	...	30.76	42.63	78. Sandy Hill .....	54.	44.29	54.33
59. Bay .....	...	29.32	38.22	79. Kirton .....	48.02	33.72	42.62
60. Warrens .....	...	36.79	49.34	80. Congo Road .....	50.03	37.05	46.60
61. Loam Farm .....	48.53	40.26	...	81. Mangrove .....	...	37.52	47.87
62. Fairfield .....	50.26	40.43	40.35	82. Senhouse Grove .....	...	41.89	50.34
V. CENTRAL LOWLAND.							
<i>St. Thomas.</i>							
63. Fisherpond .....	61.91	51.27	64.51	Christchurch.			
64. Olive Branch .....	...	49.13	54.51	85. Loamfield .....	...	37.97	36.42
65. Walk's Spring .....	66.96	50.70	61.53	86. Hopefield .....	...	40.86	45.28
66. Rugby .....	62.56	43.23	52.73	87. Charnocks .....	41.89	37.73	38.20
67. Cane Garden .....	...	43.41	51.33	88. Lowland .....	...	39.92	44.63
<i>St. George.</i>							
68. Frenchs .....	...	47.05	48.81	89. Fairy Valley .....	...	37.87	39.62
69. Windsor .....	...	41.91	48.91	90. Searles .....	47.21	39.33	42.36
70. Bulkeleys .....	...	38.66	43.97	91. Gibbons .....	...	36.55	...
71. Constant .....	39.49	38.97	46.42	92. Oistins .....	...	42.	37.31
72. Hanson .....	...	34.95	46.55	93. Maynards .....	...	39.27	41.87
73. Lornst Hall .....	...	46.44	55.89	94. Maxwells .....	45.11	35.24	38.38
				95. Wotton .....	...	38.71	42.49
				96. Graeme Hall .....	...	30.55	37.44

**APPENDIX No. 23.**

*Monthly and Annual Average Rainfall of 57 Stations from which Records have been received for Different Periods between 1843 and 1871.*

Districts, Parishes, Stations,	Eleva- tion, Years.	Date	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total.
<b>I. Below Cliff.</b>															
St. Joseph.															
1. Springfield .....	8	1853-59; 1870	278	232	133	162	374	554	472	500	528	750	763	324	5073
<b>II. Above Cliff.</b>															
2. Binfield .....	21	1851-1871	380	322	182	253	479	616	638	786	736	946	846	537	6734
3. Saltram .....	4	1867-1870	396	300	110	181	428	917	751	768	678	1095	669	514	6884
4. Castle Grant .....	5	1856; 1858-61	242	288	165	347	417	625	567	632	671	1061	907	648	6817
St. John.															
5. Guineas .....	528	1865-71	290	231	164	188	326	589	624	713	529	1001	524	382	6533
6. Colleton .....	767	1858-63; 1871	230	147	106	192	183	466	353	450	488	825	548	302	4292
7. Clifton Hall .....	702	1864-71	309	264	129	144	341	570	631	746	635	907	442	443	5574
8. Pool .....	710	1859-71	321	285	159	226	311	581	589	675	571	902	567	441	5578
9. Henley .....	553	1859-71	335	292	179	250	334	571	585	721	628	884	703	491	5988
10. Haynesfield .....	707	1847-63; 1869-71	351	285	194	260	387	583	564	709	673	846	823	541	6222
<b>III. Central Highland.</b>															
St. Peter.															
11. Nichols Abbey .....	824	1865-71	358	242	105	147	343	603	577	870	634	894	513	458	5729
12. Welsh Town .....	834	1865-71	385	235	138	141	403	682	631	841	501	921	490	425	5795
St. Thomas.															
13. Mount Wilton .....	987	1866-71	540	324	196	236	344	739	699	887	672	1155	838	590	7220
14. Welshman Hall .....	905	1854-7-9; 1863-7-1	459	392	222	261	379	724	765	896	823	1002	895	624	7440
15. Highland .....	1002	1864-71	514	373	207	277	426	839	820	923	828	1186	756	625	7774
16. District D. ....	678	1854-59; 1863	448	320	230	201	204	424	565	641	576	768	868	433	5667
17. Dukes .....	817	1859-71	464	378	175	245	347	638	711	798	690	1089	824	585	6928
18. Mount Hillaby .....	5	1854-58	418	386	234	326	397	594	682	910	726	921	978	557	7132
19. Vauxhouse .....	7	1863-69	445	300	204	210	305	461	687	954	639	768	691	557	6011
20. ...	721														

APPENDIX No. 23—continued.

Districts, Parishes, Stations.	Eleva- tion.	No. of Years.	Date.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total.
20. Drax Hall .....	531	6	1853-5; 57; 60; 69	3.33	3.16	1.50	2.95	3.82	5.72	5.06	7.40	6.41	7.81	7.33	3.54	57.17
IV. LEFFWARD LOWLAND.																
<i>St. George.</i>																
21. Husbands .....	184	25	1847-71	2.62	2.20	1.28	1.95	3.78	5.08	5.68	7.73	7.11	9.58	7.43	4.15	58.55
<i>St. Lucy.</i>																
22. District E. .....	...	6	1854-5; 57-9; 71	3.18	2.73	1.29	1.50	2.26	4.64	5.23	6.63	6.19	6.74	7.51	4.20	52.10
<i>St. James.</i>																
23. Sion Hill .....	618	15	1857-71	4.81	3.71	1.72	1.95	3.96	7.13	7.59	8.15	8.08	10.69	9.28	5.78	73.
24. Westminsterland .....	332	7	1865-71	4.55	2.45	1.20	1.70	3.70	7.42	7.37	8.44	7.79	9.04	6.63	5.31	65.60
25. Holders .....	250	4	1869-71	3.78	1.29	.67	.97	1.89	3.59	4.56	6.09	5.83	6.79	4.83	2.77	43.06
26. Lascelles .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
27. Carlton .....	130	12	1860-71	4.31	2.77	1.24	2.24	3.66	6.60	7.19	8.73	8.74	10.31	7.63	5.21	68.63
<i>St. Michael.</i>																
28. Pine .....	142	7	1863-67; 70-1	2.34	1.98	.68	1.17	2.09	4.71	5.14	7.72	4.51	8.31	4.96	3.78	47.39
29. Grand View .....	21	...	1851-71	2.37	1.97	.95	1.50	3.43	4.50	5.00	6.97	5.16	7.55	5.98	3.53	48.88
30. Bush Hall .....	110	7	1865-71	2.22	1.71	.50	1.58	2.00	4.59	4.42	7.41	3.58	8.59	4.31	3.08	43.59
V. CENTRAL LOWLAND.																
<i>St. Thomas.</i>																
31. Hopewell .....	534	8	1864-71	4.14	2.71	1.41	2.01	3.42	5.58	7.17	8.03	6.75	9.55	6.60	5.46	62.83
32. Edgehill .....	453	9	1864-71	3.53	2.31	.91	1.41	2.71	4.44	6.02	7.51	5.34	8.39	5.50	4.21	52.30
33. Bridgeway .....	...	5	1867-71	4.56	2.65	1.27	1.59	3.08	6.41	6.62	6.85	7.55	9.47	6.26	3.81	60.12
<i>St. George.</i>																
34. Butts .....	241	4	1868-71	2.87	1.58	1.21	1.71	2.01	5.03	5.30	6.47	4.49	7.99	4.90	3.15	46.72
35. Endeavour .....	416	13	1859-71	3.46	2.74	1.65	2.36	3.42	5.36	5.98	7.22	5.72	9.61	5.71	4.89	58.13
36. District B. ....	264	5	1856-60	2.56	2.32	1.18	1.09	2.11	4.30	5.74	6.23	6.16	9.71	8.44	3.80	53.63

APPENDIX No. 23—*continued.*

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Districts, Parishes, Stations.	Eleva- tion.	No. of Years.	Date.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total.
St. George, <i>continued.</i>																
37. Egerton .....	837	8	1858-61; 63-7; 70-71	2.14	2.39	1.82	1.55	2.00	5.81	4.96	6.72	5.41	9.32	6.59	4.23	52.81
38. Walkers .....	318	7	1865-71	3.16	2.41	1.05	2.08	9.81	5.24	5.20	7.37	4.71	9.03	6.42	4.18	53.36
39. Valley .....	162	9	1863-71	2.89	2.16	1.00	1.90	2.55	4.86	5.45	7.82	5.48	8.45	5.48	4.39	52.40
VI. SOUTHERN LOWLAND.																
St. Philip.																
40. Three Houses .....	125	7	1865-71	2.26	1.97	1.21	1.82	3.09	5.22	5.66	7.41	4.84	9.43	4.84	3.64	51.39
41. Fairfield .....	156	8	1843-50	2.43	2.15	1.83	3.81	8.81	5.88	5.63	5.40	5.55	6.48	7.34	5.73	56.06
42. Bushy Park .....	161	9	1853-71	1.90	1.77	1.02	1.43	2.42	4.04	4.88	7.47	4.99	6.91	4.90	4.64	45.37
43. Oughtersons .....	291	20	1852-71	2.62	2.19	1.16	1.94	3.24	4.90	4.97	6.87	5.41	7.40	6.48	4.38	51.58
44. Thurbans .....	118	12	1860-71	2.74	2.14	1.25	2.09	3.66	5.46	5.28	7.29	6.03	9.63	5.61	4.98	55.93
45. Marchfield .....	109	13	1851-60; 1868-6-71	2.52	2.46	1.41	1.66	3.73	4.42	4.26	6.00	5.05	7.61	6.94	3.80	49.88
46. Dodds .....	210	13	1859-71	2.92	2.32	1.52	2.32	3.40	5.41	5.68	7.23	6.03	8.49	6.38	4.66	56.46
47. Chapel .....	228	13	1859-71	3.00	2.34	1.47	2.13	3.49	5.25	5.42	7.19	6.16	9.16	6.54	4.50	56.60
48. Carrington .....	110	15	1857-71	2.65	2.22	1.16	1.77	2.71	4.59	4.92	6.47	5.32	8.77	6.13	3.99	50.80
49. Halton .....	280	21	1851-71	3.00	2.45	1.53	2.15	3.85	5.15	5.26	7.33	5.70	8.69	6.79	4.55	56.53
50. Edgecombe .....	207	17	1855-71	2.61	2.14	1.14	1.88	3.03	4.82	5.08	7.19	5.29	6.12	5.79	3.89	50.98
Christ Church.																
51. Woodburne .....	150	14	1855-59; 61-3; 5; 7-71	2.41	1.74	1.16	1.88	3.04	4.91	5.04	6.42	4.72	7.31	6.19	3.78	48.76
52. Lowthers .....	220	16	1853-59; 63-71	2.31	2.04	1.02	1.52	2.73	4.22	4.48	6.66	5.30	7.63	5.99	3.42	47.96
53. Pilgrim .....	268	12	1860-71	2.39	1.61	1.01	1.42	2.21	4.68	4.05	6.21	5.21	7.25	4.76	3.34	44.10
54. Balls .....	270	8	1864-71	2.69	1.88	1.01	1.54	2.16	4.87	4.72	6.95	4.23	7.74	4.86	2.82	47.23
55. Bannatyne .....	307	7	1865-71	2.97	2.41	1.64	2.26	5.96	5.66	8.16	4.26	8.75	5.72	4.16	52.96	
56. Emerald .....	165	6	1866-71	2.39	1.66	.72	1.06	1.46	4.30	3.96	7.07	4.73	8.28	4.40	3.25	43.17
57. St. Anu's .....	28	20	1852-71	2.42	1.91	1.85	1.36	3.63	4.69	4.80	6.34	5.47	7.72	5.66	3.28	48.8

## APPENDIX No. 24.

*Average Yearly Rainfall in inches, of each Parish and District, in the Four Years 1869-1872,  
and the Mean of the 25 Years from 1847 to 1871.*

Districts.	Parishes.	Average Yearly Rainfall.				
		Mean of 25 years, 1847-71.	1869.	1870.	1871.	1872.
Scotland, or Below Cliff.....	St. Andrew .....	...	...	72.48	32.60	39.56
	St. Joseph, part of	49.12	...	62.05	36.20	50.44
	St. John, part of .....	...	...	50.47	35.38	44.35
	Average....	...	...	63.91	35.32	46.20
Windward Highland, or Above Cliff.....	St. Joseph, part of	67.54	58.64	74.84	51.28	63.58
	St. John, part of .....	59.07	46.87	64.85	44.81	55.43
	Average....	62.99	50.23	67.79	47.14	57.71
	St. Peter, part of...	57.61	classed as	Leeward	Lowland	39.08
Central Highland ...	St. James, part of	...	...	...	42.17	47.53
	St. Thomas, part of	70.00	60.13	74.15	51.57	63.73
	St. George, part of	57.18	43.89	64.88	49.50	59.15
	St. Philip, part of...	...	...	...	...	43.07
Leeward Lowland ...	Average....	63.09	57.34	69.52	49.89	56.45
	Average of High-lands .....	63.04	53.51	67.07	45.64	54.38
	St. Lucy .....	57.99	56.17	59.94	33.17	31.30
	St. Peter, part of...	52.10	48.97	65.61	39.60	43.60
Central Lowland ...	St. James, part of...	70.01	54.86	70.09	46.69	51.80
	St. Michael .....	49.01	42.53	45.41	35.02	42.18
	Average....	57.34	51.61	60.03	37.40	40.35
	St. Thomas, part of	58.15	50.89	63.07	46.60	55.26
Southward Lowland	St. George, part of	54.84	45.89	50.61	42.40	49.71
	Average....	56.44	47.76	56.84	44.04	52.05
	St. Philip, part of...	53.27	43.66	53.61	39.19	46.58
	Christ Church .....	47.83	41.39	47.74	38.82	41.74
	Average....	50.68	42.75	51.48	39.03	44.31
	Average of Low-lands .....	55.08	46.50	55.61	39.64	44.48
	Total of Island .....	57.74	48.52	60.17	41.46	48.36

## APPENDIX No. 25.

*Monthly and Annual Rainfall in inches, of each Parish and District, upon an Average of 25 Years, 1847-71.*

Districts.	Parishes.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Scotland, or Below Cliff .....	St. Andrew .....	281	230	128	171	335	516	467	491	556	725	711	317	49.12
	St. Joseph, part of .....	...	...	...	...	...	...	...	...	...	...	...	...	...
	St. John, part of .....	...	...	...	...	...	...	...	...	...	...	...	...	...
	Average....	...	...	...	...	...	...	...	...	...	...	...	...	...
Windward Highland, or Above Cliff .....	St. Joseph, part of .....	389	328	179	252	482	627	639	796	731	946	841	545	67.54
	St. John, part of .....	326	269	182	239	375	561	569	707	622	848	708	499	59.07
	Average....	...	...	...	...	...	...	...	...	...	...	...	...	...
Central Highland .....	St. Peter, part of .....	355	296	181	245	425	593	601	748	672	895	769	520	62.99
	St. James, part of .....	371	338	122	135	373	643	604	855	568	908	502	441	57.61
	St. Thomas, part of .....	456	363	206	274	362	648	697	829	714	1020	859	572	70.
	St. George, part of .....	368	271	143	244	343	534	507	694	638	820	735	402	57.18
	St. Philip, part of .....	...	...	...	...	...	...	...	...	...	...	...	...	...
	Average....	410	306	164	219	362	623	627	808	648	941	709	492	63.09
	Average of Highlands .....	380	300	173	233	396	607	613	776	661	917	742	507	63.04
Leeward Lowland .....	St. Lucy .....	257	219	130	195	367	508	560	744	714	954	736	411	57.99
	St. Peter, part of .....	318	273	129	150	236	464	523	663	619	674	751	420	52.10
	St. James, part of .....	423	333	149	199	396	7	725	812	808	1032	871	547	70.01
	St. Michael .....	240	191	97	154	343	451	491	685	508	767	605	364	49.01
	Average....	295	241	124	179	353	526	572	734	662	888	727	427	57.34
Central Lowland .....	St. Thomas, part of .....	421	285	172	185	262	484	625	716	607	848	741	463	58.15
	St. George, part of .....	302	230	132	181	284	511	568	715	663	916	640	438	54.84
	Average....	...	...	...	...	...	...	...	...	...	...	...	...	...
Southward Lowland .....	St. Philip, part of .....	262	223	145	204	368	505	509	677	552	794	640	53.27	53.27
	Christ Church .....	247	189	107	155	290	459	455	642	568	730	592	350	47.83
	Average....	...	...	...	...	...	...	...	...	...	...	...	...	...
	Average of Lowlands .....	297	234	132	181	323	509	551	706	603	849	685	424	55.08
	Total of Island .....	326	258	147	199	354	545	570	724	624	869	708	450	57.74

## APPENDIX No. 26.

*Percentage Proportion of Rain falling in each Month and Quarter, in each District of the Island,  
on the Average of the Years 1847-71.*

Months and Quarters.	1st Section		2nd Section.			3rd Section.			Total of Island.
	Below Cliff.	Above Cliff.	Central High- land.	Total.	Leeward Low- land.	Central Low- land.	South- ward Lowland	Total.	
December .....	6·5	8·2	7·8	8·	7·5	7·9	8·0	7·7	7·8
January .....	5·7	5·7	6·5	6·	5·1	6·4	5·0	5·4	5·7
February .....	4·7	4·7	4·9	4·8	4·0	4·6	4·1	4·2	4·5
1st Quarter....	16·9	18·6	19·2	18·8	16·6	18·9	17·1	17·3	18·0
March .....	2·6	2·9	2·6	2·7	2·3	2·7	2·5	2·4	2·6
April .....	3·5	3·9	3·5	3·7	3·1	3·3	3·6	3·3	3·4
May .....	6·8	6·7	5·7	6·2	6·2	4·9	6·6	5·8	6·0
2nd Quarter....	12·9	13·5	11·8	12·6	11·6	10·9	12·7	11·5	12·0
June .....	10·4	9·4	9·9	9·7	9·2	8·8	9·6	9·2	9·5
July .....	9·5	9·5	9·9	9·8	10·0	10·6	9·6	10·	9·9
August .....	10·	11·9	12·8	12·3	12·8	12·7	13·1	12·	12·6
3rd Quarter....	29·9	30·8	32·6	31·8	32·0	32·1	32·3	32·1	32·0
September ...	11·2	10·7	10·3	10·5	11·6	10·3	10·6	11·1	10·8
October ....	14·7	14·2	14·9	14·6	15·5	15·6	15·1	15·5	15·
November ...	14·4	12·2	11·2	11·7	12·7	12·2	12·2	12·5	12·2
4th Quarter....	40·3	37·1	36·4	36·8	39·8	38·1	37·9	39·1	38·0
Total .....	100	100	100		100	100	100		100

## APPENDIX No. 27.

*Average Yearly Rainfall in inches at each Station, eighty-two in number, of which the Height is known, in the two Years 1870, 1871.*

Stations.	Under 100 feet.	100 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 800	800 to 900	900 to 1,000	Above 1,000 feet.
<b>1. BELOW CLIFF.</b>											
<i>St. John..</i>											
Newcastle .....	...	...	...	41.86	...	...	...	...	...	...	...
<b>2. WINDWARD HIGH- LAND.</b>											
<i>St. Joseph.</i>											
Binfield .....	...	...	...	...	...	...	...	...	...	...	61.62
Horsehill.....	...	...	...	...	...	...	...	...	...	...	62.72
Blackmans .....	...	...	...	...	...	...	...	...	...	...	64.89
Do. Yard.....	...	...	...	...	...	...	...	...	...	...	67.90
Little Island .....	...	...	...	...	...	...	...	...	...	...	64.53
<i>St. John.</i>											
Stewart's Hill.....	...	...	...	...	...	48.39	...	...	...	...	...
Guinea .....	...	...	...	...	...	52.71	...	...	...	...	...
Cliff .....	...	...	...	...	...	55.76	...	...	...	...	...
Ashford .....	...	...	...	...	...	...	56.77	...	...	...	...
Risque.....	...	...	...	...	...	...	55.18	...	...	...	...
Clifton Hall .....	...	...	...	...	...	...	...	50.73	...	...	...
Pool .....	...	...	...	...	...	...	...	53.26	...	...	...
Henley .....	...	...	...	...	...	57.45	...	...	...	...	...
Edgecliff .....	...	...	...	...	...	...	...	...	56.61	...	...
Sherbourne .....	...	...	...	...	...	...	...	55.38	...	...	...
Todds .....	...	...	...	...	...	...	61.53	...	...	...	...
Haynesfield .....	...	...	...	...	...	...	...	62.07	...	...	...
<b>3. CENTRAL HIGHLAND.</b>											
<i>St. Peter.</i>											
Nicholas Abbey .....	...	...	...	...	...	...	...	...	52.21	...	...
Welch Town .....	...	...	...	...	...	...	...	...	45.56	...	...
<i>St. Thomas.</i>											
Mount Wilton .....	...	...	...	...	...	...	...	...	...	...	62.50
Welchman Hall .....	...	...	...	...	...	...	...	...	...	...	63.75
Highland .....	...	...	...	...	...	...	...	...	...	...	71.61
Dukes .....	...	...	...	...	...	...	...	...	...	...	67.38
Mangrove Pond.....	...	...	...	...	...	...	60.83	...	...	...	...
<i>St. George.</i>											
Woodland .....	...	...	...	...	...	...	56.20	...	...	...	...
Lemon Arbour .....	...	...	...	...	...	...	...	62.18	...	...	...
Redland .....	...	...	...	...	...	...	...	62.10	...	...	...
Cottage .....	...	...	...	...	...	...	...	53.76	...	...	...
<b>4. LEeward LOWLAND.</b>											
<i>St. Lucy.</i>											
Husbands .....	...	58.70	...	...	...	...	...	...	...	...	...
<i>St. Peter.</i>											
Alleynedale.....	...	...	...	59.38	...	...	...	...	...	...	...
Warleigh .....	...	...	...	55.07	...	...	...	...	...	...	...
Maynards .....	...	...	50.69	...	...	...	...	...	...	...	...
Gibbs .....	50.60	...	...	...	...	...	...	...	...	...	...
<i>St. James.</i>											
Sion Hill .....	...	...	...	56.38	...	...	61.79	...	...	...	...
Westmoreland .....	...	...	...	...	...	...	...	...	...	...	...
Holders .....	...	...	47.25	...	...	...	...	...	...	...	...

**APPENDIX No. 27—continued.**

## APPENDIX No. 28.

*Statement of the Sugar Crop of Barbados, i.e. of Sugar grown in the Island and exported, in each year from 1806 to 1872.*

Years.	Hhds.	Years.	Hhds.	Years.	Hhds.
1806	16,596	1828	28,669	1850	35,302
7	15,835	9	23,715	1	38,731
8	13,996	30	27,354	2	48,611
9	18,074	1	27,728	3	38,719
10	16,348	2	19,708	4	45,181
1	16,377	3	28,143	5	39,290
2	15,436	4	28,341	6	43,077
3	13,584	5	25,272	7	38,798
4	19,299	6	25,414	8	50,788
5	18,350	7	32,754	9	39,666
6	20,639	8	33,216	60	42,684
7	22,480	9	28,316	1	49,745
8	22,379	40	13,899	2	46,120
9	25,006	1	17,811	3	42,281
20	15,616	2	21,607	4	36,199
1	17,906	3	22,587	5	46,068
2	13,860	4	23,146	6	57,188
3	28,305	5	24,777	7	51,304
4	23,078	6	21,996	8	58,250
5	24,857	7	33,703	9	32,150
6	21,906	8	28,169	70	39,270
7	18,270	9	33,077	1	53,907
				2	39,167

## APPENDIX No. 29.

*Statement of the Average of Crops for different periods, ascending from the Year 1871.*

		Hhds.	
Average of 1870-71, 2 years.....		46,588	
" 69 " 3 "		41,776	
" 68 " 4 "		45,894	
" 67 " 5 "		46,976	
" 66 " 6 "		48,678	
" 65 " 7 "		48,305	
" 64 " 8 "		46,792	
" 63 " 9 "		46,291	
" 62 " 10 "		46,278	
" 61 " 11 "		46,680	
" 60 " 12 "		46,264	
" 59 " 13 "		45,756	
" 58 " 14 "		46,116	
" 57 " 15 "		45,628	
" 56 " 16 "		45,481	
" 55 " 17 "		45,211	
" 54 " 18 "		45,059	
" 53 " 19 "		43,720	
" 52 " 20 "		44,964	
" 51 " 21 "		44,667	
" 50 " 22 "		44,242	
" 49 " 23 "		43,800	
" 48 " 24 "		43,024	
" 47 " 25 "		42,731	

Average of 14 years, 1858-71,  
46,115 hhds.

Average of 25 years, 42,731  
hhds. Increase  
in second period  
7,692 hhds. = 20  
per cent.

Average of 11 years, 1847-57,  
38,423 hhds.

NOTE.—The year 1847 was the first year in which the crop recovered from the effects of Emancipation in 1839. The year 1858 was the first in which the crop reached 50,000 hhds. The years 1865 to 1868 are those which exhibit the highest average of two, three, or four consecutive years, viz. :

Average of 4 years, 1865 to 1868.....53,202 hhds.  
 " 3 " 1866 to 1868.....55,581 "  
 " 2 " 1867 and 1868.....54,777 "

## APPENDIX No. 30.

*Rainfall and Crops of each Year, compared with the Average, 1847-71.*

Years.	Total Average Rainfall.	Rainfall of Year compared with the Average of 57·74 Inches.		Crop of		Crop compared with Average.				Hhds. of Crop to Inches of Rain in Preceding Year.	
				Same Year.	Follow-ing Year.	Same Year.		Following Year.			
		+	-			+	-	+	-		
1847	Inches.	Percent	age.	Hhds.	Hhds.	Percent	age.	Percent	age.	No.	
8	48·10	10	17	33,703	28,169	... 12	27	... 27	27	585	
9	63·77	10	...	28,169	33,077	... 27	15	... 15	15	518	
50	52·77	...	8	33,077	35,302	... 15	9	... 9	9	669	
1	67·88	17	...	35,302	38,731	... 9	Average	... Average	Average	570	
2	59·40	3	...	38,731	48,611	Average	25	... 25	25	802	
3	58·77	2	...	48,611	38,719	25	Average	... Average	Average	651	
4	68·84	19	...	38,719	45,181	Average	17	... 17	17	656	
5	50·88	...	12	45,181	39,290	17	1	... 1	1	772	
6	77·31	34	...	39,290	43,077	1	11	... 11	11	800	
7	48·49	...	16	43,077	38,798	11	...	... 14	14	557	
8	60·90	5	...	38,798	50,788	14	13	... 13	13	800	
9	45·22	...	22	50,788	39,666	13	...	... 12	12	834	
60	54·22	...	6	39,666	42,684	...	12	... 5	5	877	
1	57·91	Average.	...	42,684	49,745	...	5	... 10	10	787	
2	72·82	28	...	49,745	46,120	10	...	... 2	2	859	
3	59·27	3	...	46,120	42,281	2	...	... 6	6	624	
4	42·38	...	27	42,281	36,199	...	6	... 19	19	713	
5	59·19	2	...	36,199	46,068	...	19	... 2	2	854	
6	68·64	19	...	46,068	57,188	2	...	... 27	27	778	
7	59·68	4	...	57,188	51,304	27	...	... 14	14	833	
8	69·93	21	...	51,304	58,250	14	...	... 29	29	859	
9	44·60	...	24	58,250	32,150	29	...	... 28	28	836	
70	48·52	...	16	32,150	39,270	...	28	... 13	13	720	
1	60·17	4	...	39,270	53,907	...	13	... 20	20	809	
2	41·46	...	28	53,907	39,167	20	...	... 13	13	895	
	48·39	...	16	39,167	...	...	13	... 944	944		

## APPENDIX No. 31.

*Statement of the Quantities of Guano and other Manures imported into Barbados, as extracted from the Blue Books, in each Year from 1851 to 1871.*

Years.	Guano.		Other Manures.		Remarks.
	Quantities.	Value.	Quantities.	Value.	
1851	Tons.	£	Tons	£	
2	...	...	1467	27,606	
3	...	...	3138	26,125	
4	...	...	830	9,112	
5	1896	25,242	...	...	
6	3900	39,000	Pkgs.	332	82
7	...	...	4611	1,849	
8	...	...	2265	46,110	
9	...	...	2265	22,650	
60	796	7,955	"	8764	
1	...	...	1739	87,640	
2	...	...	2187	5,627	
3	...	...	1754	3,159	
4	...	...	"	1754	17,540
5	...	...	Pkgs.	2686	8,058
6	...	...	Tons	4986	49,860
7	...	...	"	5770	57,700
8	4285	53,562	"	5976	59,760
9	7000	70,000	Pkgs.	1313	13,130
70	10665 $\frac{1}{2}$	106,655	Tons	161	1,610
1	4670	46,700	...	...	1,093
			...	...	5,559

About this time the Imperial Customs were abolished, and the Returns were in confusion.

It appears that in some years the Guano has been kept separate, and in other years not. It has been kept separate in 1870 and 1871, and valued at 10*l.* per ton.

## APPENDIX No. 32.

*Monthly Average Rainfall in Years yielding Largest and Smallest Crops, 1847-71.*

Years.	Percentage of Difference of Crops.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
1868	Above													
	29	4.29	1.74	1.93	.97	1.68	3.45	6.26	5.62	4.63	8.20	4.42	1.40	44.60
	66	3.75	2.75	1.57	1.26	2.74	2.63	6.23	11.89	4.22	8.99	7.85	5.80	59.68
	52	3.30	1.58	1.53	2.17	7.11	2.17	2.49	7.36	3.72	6.53	14.15	6.66	58.77
	71	2.13	2.29	1.07	.56	.98	2.71	3.65	5.37	6.70	6.33	4.03	4.08	41.46
	54	2.64	1.95	1.43	1.20	1.33	5.56	5.68	5.11	3.97	7.03	11.19	3.79	50.88
	67	2.68	4.49	.88	1.64	2.66	10.94	7.50	9.62	8.54	12.74	4.30	3.89	69.93
	58	1.52	1.28	1.40	.96	2.23	4.54	3.69	4.24	3.54	10.46	6.13	5.22	45.22
	56	1.73	2.18	1.19	.81	2.94	5.49	2.86	7.80	5.98	6.15	7.25	4.21	48.49
	61	3.49	1.96	2.76	6.35	8.01	9.31	8.28	4.65	6.77	7.60	7.50	7.11	73.82
	62	7.60	1.12	.31	1.12	3.53	7.18	5.39	7.23	4.74	11.18	7.40	2.36	59.27
	65	2.36	2.19	1.39	4.13	5.89	9.19	7.35	8.91	5.07	11.	4.53	6.58	68.64
	55	6.96	2.95	1.85	5.49	6.82	6.61	8.	12.84	9.27	5.12	5.98	5.41	77.31
Average of Highest. }		3.70	2.21	1.44	2.22	3.82	5.80	5.62	7.55	5.59	8.44	7.06	4.71	58.18
1851	Average	1.62	3.01	1.99	1.58	6.13	5.31	6.63	7.00	9.25	6.53	4.29	6.05	59.40
	"	4.04	3.94	2.38	3.38	9.26	5.21	3.89	8.08	7.75	10.43	8.36	2.20	68.84
Below														
1860	5	2.28	2.85	1.13	2.41	.66	3.13	3.90	7.93	7.31	13.30	7.97	5.09	57.91
	63	1.19	3.88	2.26	2.26	.56	1.62	3.65	9.34	4.99	2.89	6.45	3.27	42.38
	50	1.14	2.52	.78	2.96	4.70	10.48	9.01	6.82	3.34	10.17	9.61	6.36	67.88
	59	2.10	2.64	1.22	1.24	3.56	5.68	5.72	3.21	4.80	10.13	10.18	3.74	54.22
	70	3.96	1.35	.90	.93	2.80	10.15	5.62	5.61	5.03	11.24	8.37	3.38	60.17
	57	2.63	5.78	2.02	1.54	2.64	5.43	7.14	6.33	7.93	6.58	9.74	3.10	60.90
	49	3.61	2.72	3.90	2.69	2.34	6.63	5.64	6.82	4.74	8.53	1.42	3.73	52.77
	47	2.83	.95	1.20	2.98	1.02	2.10	2.27	5.26	10.20	7.11	8.45	3.73	48.10
	64	2.74	2.47	.77	.63	3.07	2.17	7.51	7.37	10.77	9.14	6.31	6.16	59.19
	69	1.53	1.47	1.03	3.34	4.32	3.05	4.42	6.95	4.56	6.99	5.13	5.73	48.52
	48	4.76	2.04	2.66	1.58	6.74	2.21	6.25	7.53	5.41	11.78	5.79	7.04	63.77
Average of Lowest. }		2.43	2.42	1.62	2.05	2.76	4.78	5.56	6.66	6.28	8.89	7.22	4.66	55.15
Average of 25 years. }		3.26	2.58	1.47	1.99	3.54	5.45	5.70	7.24	6.24	8.69	7.08	4.50	57.74

## APPENDIX No. 33.

*Monthly Average Rainfall in Years preceding Largest and Smallest Crops, 1847-71.*

Years.	Percentage of Difference of Crops.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	
1868	Above														
	29	2.68	4.49	.88	1.64	2.66	10.94	7.50	9.62	8.54	12.74	4.30	3.89	69.93	
	66	2.36	2.19	1.39	4.13	5.89	9.19	7.35	8.91	5.07	11.	4.53	6.58	68.64	
	52	2.1	1.62	3.01	1.99	1.58	6.13	5.31	6.63	7.00	9.25	6.53	4.29	6.05	59.40
	71	2.0	2.96	1.35	1.90	.93	2.80	10.15	5.62	5.67	5.03	16.24	8.37	3.38	60.17
	54	1.7	4.04	3.94	2.38	3.38	9.26	5.21	3.89	8.08	7.75	10.43	8.36	2.20	68.84
	67	1.4	3.75	2.75	1.57	1.26	2.74	2.63	6.23	11.89	4.22	8.99	7.85	5.80	59.68
	58	1.3	2.63	5.78	2.02	1.54	2.64	5.43	7.14	6.33	7.93	6.58	9.74	3.10	60.90
	56	1.1	6.96	2.95	1.85	5.49	6.82	6.61	8.	12.84	9.27	5.12	5.98	5.41	77.31
	61	1.0	2.28	2.85	1.13	2.41	.66	3.13	3.90	7.93	7.31	13.30	7.97	5.09	57.91
	62	2	3.49	1.96	2.76	6.35	8.01	9.31	8.28	4.65	6.77	7.60	7.50	7.11	73.82
	65	2	2.74	2.47	.77	.66	3.07	2.17	7.51	7.37	10.77	9.14	6.31	6.16	59.19
	55	1	2.64	1.95	1.43	1.20	1.33	5.56	5.68	5.11	3.97	7.03	11.19	3.79	50.88
Average of Highest. }		3.26	2.97	1.67	2.55	4.33	6.30	6.48	7.95	7.16	9.14	7.20	4.88	63.89	
1851	Average	1.14	2.52	.78	2.96	4.70	10.48	9.01	6.82	3.34	10.17	9.61	6.86	67.88	
53	"	3.30	1.58	1.53	2.17	7.11	2.17	2.49	7.36	3.72	6.53	14.15	6.66	58.77	
Below															
1860	5	2.10	2.64	1.22	1.24	3.56	5.68	5.72	3.21	4.80	10.63	10.18	3.74	54.22	
	63	6	7.60	1.12	.31	1.12	3.53	7.18	5.39	7.23	4.74	11.18	7.40	2.36	59.27
	50	8	3.61	2.72	3.90	2.69	2.34	6.63	5.64	6.82	4.74	8.53	1.42	3.73	52.77
	59	12	1.52	1.28	1.40	.96	2.23	4.54	3.69	4.24	3.54	10.46	6.13	5.22	45.22
	70	13	1.53	1.47	1.03	3.34	4.32	3.05	4.42	6.95	4.56	6.99	5.13	5.73	48.52
	57	14	1.73	2.18	1.19	.81	2.94	5.49	2.86	7.80	5.88	6.15	7.25	4.21	48.49
	49	15	4.76	2.04	2.66	1.58	6.74	2.21	6.25	7.53	5.41	11.78	5.79	7.04	63.77
	47	16	not recorded												
	64	17	1.19	3.88	2.26	2.26	.56	1.62	3.65	9.34	4.99	2.89	6.45	3.27	42.38
	48	27	2.83	.95	1.20	2.98	1.02	2.10	2.27	5.26	10.20	7.11	8.45	3.73	48.10
	69	28	4.29	1.74	1.93	.97	1.68	3.45	6.26	5.62	4.63	8.20	4.42	1.40	44.60
Average of Lowest. }		3.11	2.00	1.71	1.79	2.89	4.19	4.61	6.40	5.35	8.34	6.26	4.04	50.69	
Average of 24 years. }		3.11	2.49	1.65	2.23	3.86	5.43	5.64	7.23	6.10	8.74	7.20	4.67	58.33	

## APPENDIX No. 34.

*Monthly Average Rainfall in the Years preceding the Highest and Lowest Crops, i.e. Crops above and below the Average, and the same in the Years yielding the Highest and Lowest Crops, compared with the Monthly Average of the 25 Years from 1847 to 1871.*

Months.	Average of whole Period 25 Years.	Average in Years preceding Highest and Lowest Crops.		Average in Years yielding Highest and Lowest Crops.	
		Above Average. 12 Years.	Below Average. 10 Years.	Above Average. 12 Years.	Below Average. 11 Years.
January .....	3.26	3.26	3.11	3.70	2.43
February .....	2.58	2.97	2.10	2.21	2.42
March .....	1.47	1.67	1.71	1.44	1.62
April .....	1.99	2.55	1.79	2.22	2.05
May .....	3.54	4.33	2.89	3.82	2.76
June .....	5.45	6.30	4.19	5.80	4.78
July .....	5.70	6.48	4.61	5.62	5.56
August .....	7.24	7.95	6.40	7.55	6.66
September .....	6.24	7.16	5.35	5.59	6.28
October.....	8.69	9.14	8.34	8.44	8.89
November.....	7.08	7.20	6.26	7.06	7.22
December .....	4.50	4.88	4.04	4.71	4.66
Total.....	57.74	63.88	50.69	58.18	55.15

NOTE.—Two years yielded Average Crops.

## APPENDIX No. 35.

*Statement showing the Influence of a Large or Small Rainfall upon the Crop of the same Year, and on that of the following Year, calculated on the Rainfall and Crop of the 25 Years from 184 to 1871.*

Months.	Crop of same year.*						Crop of following year.†					
	Years above the Average Rainfall.			Years below the Average Rainfall.			Years above the Average Rainfall.			Years below the Average Rainfall.		
	Crop above Average.	Crop below Average.	Average.	Crop above Average.	Crop below Average.	Average.	Crop above Average.	Crop below Average.	Average.	Crop above Average.	Crop below Average.	Average.
January .....	7	16	9	18	1	5	11	8	13	1	5	13
February .....	3	14	9	14	2	5	10	6	18	7	14	16
March .....	5	18	4	15	2	7	11	7	14	6	11	16
April .....	4	8	6	13	1	8	17	5	17	4	13	13
May .....	4	8	4	19	2	8	17	7	12	5	16	14
June .....	7	8	4	12	..	5	22	7	16	2	6	15
July .....	6	14	5	16	1	6	14	6	14	1	8	13
August .....	6	12	2	12	1	6	15	9	15	1	7	14
September .....	4	11	4	13	2	8	15	7	17	8	13	14
October .....	5	12	6	14	1	7	16	5	16	1	7	13
November ...	6	15	6	18	1	6	13	5	19	1	7	18
December.....	6	12	5	17	1	6	15	6	13	1	5	15
Total.....	63	...	56	...	15	77	...	78	...	79	...	41
												81
												11
												...

\* This Section covers 25 years.

† This Section covers necessarily one year less.

## APPENDIX No. 36.

*Statement showing the Influence of Wet and Dry Months, i.e. Months above and below their Average Rainfall, upon the Crops of the Same Year and of the Following Year respectively, in the 25 Years from 1847 to 1871, excluding two Years of Average Crops.*

## IN THE SAME YEAR.

January,	if wet, has been followed by a good	crop in the proportion of	7 to 3
"	if dry,	"	8 to 5
February,	if wet,	bad	9 „ 3
"	if dry,	bad	6 „ 5
March,	if wet,	bad	5 „ 4
"	if dry,	average	7 „ 7
April,	if wet,	bad	6 „ 4
"	if dry,	good	8 „ 5
May,	if wet,	average	4 „ 4
"	if dry,	good	8 „ 7
June,	if wet,	good	7 „ 4
"	if dry,	bad	7 „ 5
July,	if wet,	good	6 „ 5
"	if dry,	average	6 „ 6

## IN THE FOLLOWING YEAR.

January,	if wet, has been followed by a good	crop in the proportion of	5 to 4
"	if dry,	good	7 to 6
February,	if wet,	"	7 „ 3
"	if dry,	bad	7 „ 5
March,	if wet,	good	6 „ 4
"	if dry,	average	6 „ 6
April,	if wet,	good	5 „ 4
"	if dry,	good	7 „ 6
May,	if wet,	good	5 „ 2
"	if dry,	bad	8 „ 7
June,	if wet,	good	6 „ 4
"	if dry,	average	6 „ 6
July,	if wet,	good	9 „ 3
"	if dry,	bad	7 „ 3
August,	if wet,	good	7 „ 3
"	if dry,	bad	7 „ 5
September,	if wet,	good	8 „ 1
"	if dry,	bad	9 „ 4
October,	if wet,	good	7 „ 4
"	if dry,	bad	6 „ 5
November,	if wet,	good	7 „ 4
"	if dry,	bad	6 „ 5
December,	if wet,	good	7 „ 5
"	if dry,	bad	7 „ 3

## APPENDIX No. 37.

*Detailed Statement of the Influence of each Month upon the Crop of the same and of the following Year, calculated on the Rainfall and Crops of the 25 Years, from 1847 to 1871.*

## JANUARY.

## CROP OF THE SAME YEAR.

10 years above average Rainfall, of which 7 were above average Crop				
and 3 " below "				
2 " average.				
13 " below ,,,	of which 5 " above			"
	and 8 " below			"

## CROP OF THE FOLLOWING YEAR.

9 years above average Rainfall, of which 5 were above average Crop				
and 4 " below "				
2 " average.				
13 " below ,,,	of which 7 " above			"
	and 6 " below			"

## FEBRUARY.

## CROP OF THE SAME YEAR.

12 years above average Rainfall, of which 3 were above average Crop				
and 9 " below "				
2 " average.				
11 " below ,,,	of which 5 " above			"
	and 6 " below			"

## CROP OF THE FOLLOWING YEAR.

10 years above average Rainfall, of which 7 were above average Crop				
and 3 " below "				
2 " average.				
12 " below ,,,	of which 5 " above			"
	and 7 " below			"

## MARCH.

## CROP OF THE SAME YEAR.

9 years above average Rainfall, of which 5 were above average Crop				
and 4 " below "				
2 " average.				
14 " below ,,,	of which 7 " above			"
	and 7 " below			"

## CROP OF THE FOLLOWING YEAR.

10 years above average Rainfall, of which 6 were above average Crop				
and 4 " below "				
2 " average.				
12 " below ,,,	of which 6 " above			"
	and 6 " below			"

**APRIL.****CROP OF THE SAME YEAR.**

10 years above average Rainfall, of which 4 were above average Crop  
and 6 " below "  
2 " average.  
13 " below " of which 8 " above "  
and 5 " below "

**CROP OF THE FOLLOWING YEAR.**

9 years above average Rainfall, of which 5 were above average Crop  
and 4 " below "  
2 " average.  
13 " below " of which 7 " above "  
and 6 " below "

**MAY.****CROP OF THE SAME YEAR.**

8 years above average Rainfall, of which 4 were above average Crop  
and 4 " below "  
2 " average.  
15 " below " of which 8 " above "  
and 7 " below "

**CROP OF THE FOLLOWING YEAR.**

7 years above average Rainfall, of which 5 were above average Crop  
and 2 " below "  
2 " average.  
15 " below " of which 7 " above "  
and 8 " below "

**JUNE****CROP OF THE SAME YEAR.**

11 years above average Rainfall, of which 7 were above average Crop  
and 4 " below "  
2 " average.  
12 " below " of which 5 " above "  
and 7 " below "

**CROP OF THE FOLLOWING YEAR.**

10 years above average Rainfall, of which 6 were above average Crop  
and 4 " below "  
2 " average.  
12 " below " of which 6 " above "  
and 6 " below "

**JULY.****CROP OF THE SAME YEAR.**

11 years above average Rainfall, of which 6 were above average Crop  
and 5 " below "  
2 " average.  
12 " below " of which 6 " above "  
and 6 " below "

**CROP OF THE FOLLOWING YEAR.**

12 years above average Rainfall, of which 9 were above average Crop  
and 3 " below "  
2 " average.  
10 " below " of which 3 " above "  
and 7 " below "

## AUGUST.

## CROP OF THE FOLLOWING YEAR.

10 years above average Rainfall, of which 7 were above average Crop				
and 3 " below "				
2 " average.				
12 " below " ,	of which 5 " above			"
	and 7 " below "			"

## SEPTEMBER.

## CROP OF THE FOLLOWING YEAR.

9 years above average Rainfall, of which 8 were above average Crop				
and 7 " below "				
2 " average.				
13 " below " ,	of which 4 " above			"
	and 9 " below "			"

## OCTOBER.

## CROP OF THE FOLLOWING YEAR.

11 years above average Rainfall, of which 7 were above average Crop				
and 4 " below "				
2 " average.				
11 " below " ,	of which 5 " above			"
	and 6 " below "			"

## NOVEMBER.

## CROP OF THE FOLLOWING YEAR.

11 years above average Rainfall, of which 7 were above average Crop				
and 4 " below "				
2 " average.				
11 " below " ,	of which 5 " above			"
	and 6 " below "			"

## DECEMBER.

## CROP OF THE FOLLOWING YEAR.

12 years above average Rainfall, of which 7 were above average Crop				
and 5 " below "				
2 " average.				
10 " below " ,	of which 3 " above			"
	and 7 " below "			"

## APPENDIX No. 38.

*Statement of the Influence of each Month in the Three Wettest and Three Driest Years upon the Crop of the same and of the following Year, calculated on the Rainfall and Crops of the 25 Years, from 1847 to 1871.*

		In the same year.	In the follow- ing year.
		Per cent.	Per cent.
JANUARY	average ... 3.26 inches.		
3 highest	{ 7.60 in 1862 ..... followed by crop plus 3 6.96 in 1855 .....        "        " minus 1 4.76 in 1848 .....        "        " minus 27	minus 6 " 11 " 15	
3 lowest	{ 1.14 in 1850 .....        "        " 9 1.19 in 1863 .....        "        " 6 1.52 in 1858 .....        "        " plus 13	average minus 19 " 12	
FEBRUARY	average ... 2.58 inches.		
3 highest	{ 5.78 in 1857 ..... followed by crop minus 14 4.49 in 1867 .....        "        plus 14 3.94 in 1853 .....        "        average	plus 13 " 29 " 17	
3 lowest	{ .95 in 1847 .....        "        " minus 27 1.12 in 1862 .....        "        plus 2 1.28 in 1858 .....        "        " 13	" 6 " 12	
MARCH	average ... 1.67 inches.		
3 highest	{ 3.90 in 1849 ..... followed by crop minus 15 2.76 in 1861 .....        "        plus 10 2.38 in 1853 .....        "        average	minus 9 plus 2 " 17	
3 lowest	{ .31 in 1862 .....        "        plus 2 .77 in 1864 .....        "        minus 10 .78 in 1850 .....        "        plus 9	minus 6 plus 2 average	
APRIL	average ... 1.99 inches.		
3 highest	{ 6.35 in 1861 ..... followed by crop plus 10 5.49 in 1855 .....        "        " 1 4.13 in 1865 .....        "        " 2	plus 2 " 11 " 27	
3 lowest	{ .66 in 1864 .....        "        minus 19 .81 in 1856 .....        "        plus 11 .93 in 1870 .....        "        " 13	" 2 minus 14 plus 20	
MAY	average ... 3.54 inches.		
3 highest	{ 9.26 in 1853 ..... followed by crop average 8.01 in 1861 .....        "        plus 10 7.11 in 1852 .....        "        " 25	plus 17 " 2 average	
3 lowest	{ .56 in 1863 .....        "        minus 6 .66 in 1860 .....        "        " 5 .98 in 1871 .....        "        plus 20	minus 19 plus 10 minus 16	
JUNE	average ... 5.45 inches.		
3 highest	{ 10.94 in 1867 ..... followed by crop plus 14 10.48 in 1850 .....        "        minus 9 10.15 in 1870 .....        "        " 13	plus 29 average plus 20	
3 lowest	{ 1.62 in 1863 .....        "        plus 29 2.10 in 1847 .....        "        " 25 2.17 { 1852 .....        "        minus 19 1864 .....        "        " plus 2	minus 28 " 31 plus 2	

		In the same year.	In the follow- ing year.
		Per cent.	Per cent.
JULY.....	average ... 5·65 inches.		
3 highest {	9·01 in 1850 ..... followed by crop minus 9	average	
	8·28 in 1861 ..... " " plus 10	plus 2	
	8· in 1855 ..... " " " 7	" 11	
3 lowest {	2·27 in 1847 ..... " " " ..	minus 27	
	2·49 in 1852 ..... " " plus 25	average	
	2·86 in 1856 ..... " " " 11	minus 14	
AUGUST .....	average ... 7·24 inches.		
3 highest {	12·84 in 1855 ..... followed by crop .....	plus 11	
	11·89 in 1866 ..... " " ..	" 14	
	9·62 in 1867 ..... " " ..	" 29	
3 lowest {	3·21 in 1859 ..... " " ..	minus 5	
	4·24 in 1858 ..... " " ..	" 12	
	4·65 in 1861 ..... " " ..	" 2	
SEPTEMBER, average ... 6·24 inches.			
3 highest {	10·77 in 1869 ..... followed by crop .....	plus 10	
	10·20 in 1847 ..... " " ..	minus 27	
	9·27 in 1855 ..... " " ..	plus 11	
3 lowest {	3·34 in 1850 ..... " " ..	average	
	3·54 in 1858 ..... " " ..	minus 12	
	3·72 in 1852 ..... " " ..	average	
OCTOBER ...average ... 8·69 inches.			
3 highest {	13·30 in 1860 ..... followed by crop .....	plus 10	
	12·74 in 1867 ..... " " ..	" 29	
	11·78 in 1848 ..... " " ..	minus 15	
3 lowest {	2·89 in 1863 ..... " " ..	" 17	
	5·12 in 1855 ..... " " ..	plus 11	
	6·15 in 1856 ..... " " ..	minus 14	
NOVEMBER, average ... 7·08 inches.			
3 highest {	14·15 in 1852 ..... followed by crop .....	average	
	11·19 in 1854 ..... " " ..	plus 1	
	10·18 in 1859 ..... " " ..	minus 5	
3 lowest {	1·42 in 1849 ..... " " ..	" 9	
	4·29 in 1851 ..... " " ..	plus 25	
	4·30 in 1867 ..... " " ..	" 29	
DECEMBER, average ... 4·50 inches.			
3 highest {	7·11 in 1861 ..... followed by crop .....	plus 2	
	7·04 in 1848 ..... " " ..	minus 15	
	6·66 in 1852 ..... " " ..	average	
3 lowest {	7·40 in 1868 ..... " " ..	minus 28	
	2·20 in 1853 ..... " " ..	plus 17	
	2·36 in 1862 ..... " " ..	minus 6	

## APPENDIX No. 39.

*Examination of the Rainfall of each Month separately, during the 25 Years from 1847 to 1871, ranked according to the Quantity of Rainfall, above and below the Average, with the Percentage Excess or Deficiency of the Crops in the same Year and in the following Year respectively.*

JANUARY ALONE.				FEBRUARY ALONE.			
		Crop of same Year.	Crop of following Year.			Crop of same Year.	Crop of following Year.
Years.	In.	+	-	Years.	In.	+	-
1862	+ 7.60	2	...	1857	+ 5.78	...	...
55	6.96	1	...	67	4.49	14	13
48	4.76	27	...	53	3.94	14	29
68	4.29	29	...	63	3.88	Average	17
71	4.13	20	...	51	3.01	6	19
53	4.04	Average	17	55	2.95	Average	25
70	3.96	13	20	60	2.85	1	11
66	3.75	27	14	66	2.75	...	...
49	3.61	15	9	49	2.72	27	14
61	3.49	10	2	59	2.64	...	...
52	3.30	25	...	Average	2.58	12	5
<b>Average</b>							
1847	-2.83	...	...	1853	-2.52	9	Average
64	2.74	19	2	64	2.47	19	2
67	2.68	14	29	71	2.29	20	...
54	2.64	17	1	65	2.19	2	27
57	2.63	14	13	56	2.18	11	14
65	2.36	2	27	48	2.04	27	15
60	2.28	5	10	61	1.96	10	2
59	2.10	12	5	54	1.95	17	1
56	1.73	11	14	68	1.74	29	28
51	1.62	Average	25	52	1.58	25	Average
69	1.53	28	13	69	1.47	28	13
58	1.52	13	...	70	1.35	13	20
63	1.19	6	19	58	1.28	13	12
50	1.14	9	Average	62	1.12	2	6
				47	.95	...	27

## APPENDIX No. 39—continued.

JANUARY AND FEBRUARY TOGETHER.					MARCH ALONE.				
		Crop of same Year.	Crop of following Year.				Crop of same Year.	Crop of following Year.	
Years.	In.	+	-	+	-	Years.	In.	+	-
1855	+ 9.91	1	...	11	...	1849	+ 3.90	15	...
62	8.72	2	...	...	6	61	2.76	10	2
57	8.41	...	14	13	...	48	2.66	...	15
53	7.98	Average	17	...	...	53	2.38	Average	17
67	7.17	14	...	29	...	63	2.26	...	19
48	6.80	...	27	...	15	57	2.02	...	...
66	6.50	27	...	14	...	51	1.99	Average	25
71	6.42	20	...	...	...	68	1.93	29	...
49	6.33	...	15	9	...	55	1.85	1	11
68	6.03	29	...	...	28	66	1.57	27	...
					52	1.53	25	...	Average
Average 5.64		Average 1.47							
1861	- 5.45	10	...	2	...	1854	- 1.43	17	...
70	5.31	...	13	20	...	58	1.40	13	...
64	5.21	...	19	2	...	65	1.39	2	27
60	5.13	...	5	10	...	59	1.22	12	...
63	5.07	...	6	19	...	47	1.20	...	27
52	4.88	25	...	Average	...	56	1.19	11	...
59	4.74	...	12	5	...	60	1.13	5	10
51	4.63	Average	25	...	...	71	1.07	20	...
54	4.59	17	...	1	...	69	1.03	...	...
65	4.55	2	...	27	...	70	...	28	13
56	3.91	11	...	...	14	67	...	13	20
47	3.78	...	...	27	...	50	...	14	...
50	3.66	...	9	Average	...	64	...	9	Average
69	3.00	...	28	...	13	62	...	19	2
58	2.80	13	...	...	12	62	...	2	...

APPENDIX No. 39—*continued.*

JANUARY TO MARCH, THREE MONTHS.				APRIL ALONE.				
		Crop of same Year.	Crop of following Year.			Crop of same Year.	Crop of following Year.	
Years.	In.	+	-	Years.	In.	+	-	
1855	+ 11·76	1	...	1861	+ 6·35	10	...	
57	10·43	...	14	13	...	2	...	
53	10·36	Average	17	...	55	5·49	11	...
49	10·23	...	15	...	65	4·13	2	...
48	9·46	...	37	...	53	3·38	Average	27
62	9·03	2	...	15	...	69	3·34	17
61	8·21	10	...	6	...	47	2·98	...
66	8·07	27	...	...	...	50	2·96	28
67	8·05	14	...	14	...	49	2·69	...
68	7·96	...	29	...	60	2·41	5	12
71	7·49	29	...	28	...	63	2·26	...
63	7·33	20	...	...	52	2·17	10	27
		...	6	...	25	...	6	...
Average 7·22		Average 1·99		25	...	9	Average	
1851	- 6·62	Average	25	...	48	- 1·64	14	29
52	6·41	25	...	Average	51	1·58	...	15
60	6·26	...	5	10	57	1·58	Average	25
70	6·21	...	13	20	66	1·54	...	...
54	6·02	17	...	1	59	1·26	14	13
64	5·98	...	19	2	54	1·24	27	14
59	5·96	...	12	...	62	1·20	12	5
65	5·94	2	...	27	68	1·12	17	...
56	5·10	11	...	...	58	2	...	...
47	4·98	...	...	14	97	...	28	6
50	4·44	...	9	Average	58	29	...	...
58	4·20	13	...	...	70	96	13	12
69	4·03	...	28	...	64	11	...	...
		...	13	...	71	81	20	14
					...	19	...	...
					...	2	...	...
					...	...	...	...

APPENDIX No. 39—*continued.*

MAY ALONE.				JUNE ALONE.			
		Crop of same Year.	Crop of following Year.			Crop of same Year.	Crop of following Year.
Years.	In.	+	-	Years.	In.	+	-
1853	+ 9.26	Ave rage	17	1867	+ 10.94	14	29
61	8.01	10	...	50	10.48	...	Average
52	7.11	25	...	70	10.15	...	20
55	6.82	1	...	61	9.31	10	2
48	6.74	...	27	65	9.19	2	...
51	6.13	Ave rage	25	62	7.18	2	...
65	5.89	2	...	49	6.63	...	6
50	4.70	...	9	55	6.61	1	...
69	4.32	...	28	59	5.68	...	5
59	3.56	...	12	54	5.56	17	1
				56	5.49	11	...
Average 3.54		Average 5.43					
1862	-3.53	2	...	1857	-5.43	...	...
64	3.07	...	19	51	5.31	Average	25
56	2.94	11	...	53	5.21	Average	17
70	2.80	...	13	58	4.54	13	...
66	2.74	27	...	68	3.45	29	...
67	2.66	14	...	60	3.13	...	28
57	2.64	...	14	69	3.05	...	10
49	2.34	...	15	12	2.71	20	...
58	2.23	13	...	71	2.63	27	...
68	1.68	29	...	66	2.21	...	14
54	1.33	17	...	48	2.17	25	...
47	1.02	...	...	52	...	Average	15
71	.98	20	...	64	2.17	...	2
60	.66	...	5	47	2.10	...	27
63	.56	...	10	63	1.62	...	19
		6	...	19	6	...	19

APPENDIX No. 39—*continued.*

JULY ALONE.				AUGUST ALONE.			
		Crop of same Year.	Crop of following Year.			Crop of following Year.	
Years.	In.	+	-	Years.	In.	+	-
1850	+ 9.01	..	9	1855	+ 12.84	11	...
61	8.28	10	...	66	11.89	14	...
55	8.00	1	...	67	9.62	29	...
64	7.51	..	19	63	9.34	..	19
67	7.50	14	...	65	8.91	27	...
65	7.35	2	...	53	8.08	17	...
57	7.14	..	14	60	7.93	10	...
51	6.63	Average	25	56	7.80	..	14
68	6.26	29	...	48	7.53	..	15
48	6.25	..	27	64	7.37	2	...
66	6.23	27	...	52	7.36	Average	
59	5.72	..	12				
			5				
<b>Average</b>				<b>Average</b>		<b>7.24</b>	
1854	- 5.68	17	...	1862	- 7.23	...	6
49	5.64	..	15	51	7.00	25	...
70	5.62	..	13	69	6.95	..	12
62	5.39	2	...	49	6.82	..	9
69	4.42	..	28	50	6.82	Average	
60	3.90	..	5	57	6.33	13	...
53	3.89	Average	17	68	5.62	..	28
58	3.69	13	...	70	5.61	20	...
63	3.65	..	6	71	5.37	..	...
71	3.65	20	...	47	5.26	..	27
56	2.86	11	...	54	5.11	1	...
52	2.49	25	...	61	4.65	2	...
47	2.27	..	...	58	4.24	..	12
				59	3.21	..	5
			27				

APPENDIX No. 39—*continued.*

SEPTEMBER ALONE.			OCTOBER ALONE.			NOVEMBER ALONE.		
Crop of following Year.			Crop of following Year.			Crop of following Year.		
Years.	In.		Years.	In.		Years.	In.	
1864 + 10.77			1860 + 13.30			1852 + 14.15		
47 10.20	2	—	67 12.74	29	—	54 11.19	1	—
55 9.27	11	...	48 11.78	...	15	59 10.18	...	5
51 9.25	25	...	70 11.24	20	...	57 9.74	13	...
67 8.54	29	...	62 11.18	...	6	50 9.61	Average	27
57 7.93	13	...	65 11.00	27	...	47 8.45	...	
53 7.75	17	...	58 10.46	...	12	70 8.37	20	...
60 7.31	10	...	53 10.43	17	...	53 8.36	17	...
61 6.77	2	...	50 10.17	Average	5	60 7.97	10	...
71 6.70	20	...	59 10.13	...	1	66 7.85	14	...
			64 9.14	...	14	61 7.50	2	...
			66 8.99	...		62 7.40	...	6
						56 7.25	...	14
Average 6.24			Average 8.69			Average 7.08		
1856 — 5.88	...	14	1849 — 8.53	...	9	1863 — 6.45	...	19
48 5.41	...	15	68 8.20	...	28	64 6.31	2	...
65 5.07	27	...	61 7.60	...	...	58 6.13	...	12
70 5.03	20	...	47 7.11	...	27	55 5.98	11	...
63 4.99	...	19	54 7.03	1	...	48 5.79	...	15
59 4.80	...	5	69 6.99	...	13	69 5.13	...	5
49 4.74	...	9	57 6.58	13	...	68 4.42	...	28
62 4.74	...	6	51 6.53	25	...	65 4.53	27	...
68 4.63	...	28	52 6.53	Average	...	51 4.29	25	...
69 4.56	...	13	71 6.33	...	14	71 4.03	...	...
66 4.22	14	...	56 6.15	...	12	49 1.42	...	9
54 3.97	1	...	58 5.12	...	19			
52 3.72	Average		63 2.89	...				
58 3.54	...	12						
50 3.34	Average							

APPENDIX NO. 39—*continued.*

DECEMBER ALONE.				NOVEMBER AND DECEMBER TOGETHER.			
		Crop of following Year.				Crop of following Year.	
Years.	In.	+	-	Years.	In.	+	-
1861	+ 7·11			1852	+ 20·81		Average
48	7·04	2	19	50	15·97		Average
52	6·66	...	Average	54	14·98	1	...
65	6·58	27	...	61	14·61	2	...
50	6·36	...	Average	59	13·92	...	5
64	6·16	2	...	66	13·65	14	...
51	6·05	21	...	60	13·06	10	...
66	5·80	14	...	57	12·84	13	15
69	5·73	12	...	48	12·83	...	...
55	5·41	12	...	64	12·47	2	...
58	5·22	...	11	47	12·18	...	17
60	5·09	10	...	70	11·75	20	...
<b>Average 4·50</b>				56	11·46	...	14
				55	11·39	11	...
				58	11·45	...	12
 1856				 <b>Average 11·22</b>			
71	- 4·21	...	14	1865	- 11·11	27	...
67	4·08	...		69	10·86	...	13
54	3·89	...	29	53	10·56	17	...
59	3·79	2	...	51	10·34	25	...
47	3·74	...	5	62	9·76	...	6
49	3·73	...	...	63	9·72	...	19
70	3·73	...	8	67	8·19	29	...
63	3·38	20	...	71	8·11	...	...
57	3·27	...	19	68	5·82	...	28
62	3·10	13	...	49	5·15	...	9
53	2·36	...	6				
68	2·20	...	19				
	1·40	...	28				

## APPENDIX No. 40.

*Examination of each Year, 1847-72.**Rainfall—Yearly.**Monthly.**Crops.*Compared  
with average.

1847	Rainfall of same year .....	48.10 inches.....	below 17 per cent.
	" preceding year .....	65.82 "	above 14 "
	" first half of preceding year .....	22.29 "	
	" September .....	7.48 "	
	" July .....	5.26 "	
	" May .....	3.74 "	
	" August .....	6.79 "	
	" December .....	14.18 "	
	" January of same year .....	2.83 "	
	" February .....	.95 "	
Crop of 1847.....below average.....		12 per cent.	
" 1848....." .....		27 "	
No. of hds. per inch of rain, 1847.....		670	
" " " 1848.....		585	
1848 Rainfall of same year .....			
" preceding year .....		63.77 inches.....	above 10 per cent.
" first half of preceding year .....		48.10 "	below 17 "
" September .....		11.08 "	
" July .....		10.20 "	
" May .....		2.27 "	
" August .....		1.02 "	
" December .....		5.26 "	
" January of same year .....		3.73 "	
" February .....		4.76 "	
Crop of 1848.....below average.....		27 per cent.	
" 1849....." .....		15 "	
No. of hds. per inch of rain, 1848.....		585	
" " " 1849.....		518	
1849 Rainfall of same year .....			
" preceding year .....		52.77 inches.....	below 8 per cent.
" first half of preceding year .....		63.77 "	above 10 "
" September .....		9.99 "	
" July .....		5.41 "	
" May .....		6.25 "	
" August .....		6.74 "	
" December .....		7.53 "	
" January of same year .....		7.04 "	
" February .....		3.61 "	
Crop of 1849.....below average.....		15 per cent.	
" 1850....." .....		9 "	
No. of hds. per inch of rain, 1849.....		518	
" " " 1850.....		669	

		Compared with average.
1850	Rainfall of same year .....	67.88 inches.....above 17 per cent.
"	preceding year .....	52.77 " .....below 8 "
"	first half of preceding year .....	21.89 "
"	September .....	4.74 "
"	July .....	5.64 "
"	May .....	2.34 "
"	August .....	6.82 "
"	December .....	6.36 "
"	January of same year .....	1.14 "
"	February .....	2.52 "
	Crop of 1850.....below average.....	9 per cent.
	" 1851.....average	
	No. of hhds. per inch of rain, 1850.....	669
	" " " 1851.....	570
1851	Rainfall of same year .....	59.40 inches.....above 3 per cent.
"	preceding year .....	67.88 " .....17 "
"	first half of preceding year .....	22.58 "
"	September .....	9.25 "
"	July .....	6.63 "
"	May .....	6.13 "
"	August .....	7 "
"	December .....	6.05 "
"	January of same year .....	1.62 "
"	February .....	3.01 "
	Crop of 1851.....average	
	" 1852.....above average.....	25 per cent.
	No. of hhds. per inch of rain, 1851.....	570
	" " " 1852.....	802
1852	Rainfall of same year .....	58.77 inches.....above 2 per cent.
"	preceding year .....	59.40 " .....3 "
"	first half of preceding year .....	19.64 "
"	September .....	3.72 "
"	July .....	2.49 "
"	May .....	7.11 "
"	August .....	7.36 "
"	December .....	6.05 "
"	January of same year .....	3.30 "
"	February .....	1.58 "
	Crop of 1852.....above average.....	25 per cent.
	" 1853.....average	
	No. of hhds. per inch of rain, 1852.....	802
	" " " 1853.....	651
1853	Rainfall of same year .....	68.84 inches.....above 19 per cent.
"	preceding year .....	58.77 " .....2 "
"	first half of preceding year .....	17.86 "
"	September .....	3.72 "
"	July .....	2.49 "
"	May .....	7.11 "
"	August .....	7.36 "
"	December .....	6.66 "
"	January of same year .....	4.04 "
"	February .....	3.94 "
	Crop of 1853.....average	
	" 1854.....above average.....	17 per cent.
	No. of hhds. per inch of rain, 1853.....	651
	" " " 1854.....	656

Compared  
with average.

1854	Rainfall of same year .....	50.88 inches.....	below 12 per cent.
	" preceding year .....	68.84 "	above 19 "
	" first half of preceding year .....	28.21 "	
	" September .....	7.75 "	
	" July .....	3.89 "	
	" May .....	9.26 "	
	" August .....	8.08 "	
	" December .....	2.20 "	
	" January of same year .....	2.64 "	
	" February .....	1.95 "	
Crop of 1854.....		above average.....	17 per cent.
" 1855.....		" .....	1 "
No. of hds. per inch of rain, 1854.....			656
" " " 1855.....			772
 1855 Rainfall of same year .....			
77.31 inches..... above 34 per cent.			
" preceding year .....	50.88 "	below 12 "	
" first half of preceding year .....	14.11 "		
" September .....	3.97 "		
" July .....	5.68 "		
" May .....	1.33 "		
" August .....	5.11 "		
" December .....	3.79 "		
" January of same year .....	6.96 "		
" February .....	2.95 "		
Crop of 1855.....		above average.....	1 per cent.
" 1856.....		" .....	11 "
No. of hds. per inch of rain, 1855.....			772
" " " 1856.....			557
 1856 Rainfall of same year .....			
48.49 inches..... below 16 per cent.			
" preceding year .....	77.31 "	above 34 "	
" first half of preceding year .....	30.68 "		
" September .....	9.27 "		
" July .....	8 "		
" May .....	6.82 "		
" August .....	12.84 "		
" December .....	5.41 "		
" January of same year .....	1.73 "		
" February .....	2.18 "		
Crop of 1856.....		above average.....	11 per cent.
" 1857.....		below " .....	14 "
No. of hds. per inch of rain, 1856.....			557
" " " 1857.....			800
 1857 Rainfall of same year .....			
60.90 inches..... above 5 per cent.			
" preceding year .....	48.49 "	below 16 "	
" first half of preceding year .....	14.34 "		
" September .....	5.88 "		
" July .....	2.86 "		
" May .....	2.94 "		
" August .....	7.80 "		
" December .....	4.21 "		
" January of same year .....	2.63 "		
" February .....	5.78 "		
Crop of 1857.....		below average.....	14 per cent.
" 1858.....		above " .....	18 "
No. of hds. per inch of rain, 1857.....			800
" " " 1858.....			834

Compared with average.			
1858	Rainfall of same year .....	45.22 inches.....	below 22 per cent.
"	preceding year .....	60.90 "	above 5 "
"	first half of preceding year .....	20.04 "	
"	September .....	7.93 "	
"	July .....	7.14 "	
"	May .....	2.64 "	
"	August .....	6.83 "	
"	December .....	3.10 "	
"	January of same year .....	1.52 "	
"	February .....	1.28 "	
	Crop of 1858.....	above average.....	13 per cent.
	" 1859.....	below average.....	12 "
	No. of hhds. per inch of rain, 1858.....	834	
	" " " 1859.....	877	
1859	Rainfall of same year .....	54.22 inches.....	below 6 per cent.
"	preceding year .....	45.22 "	22 "
"	first half of preceding year .....	11.93 "	
"	September .....	3.54 "	
"	July .....	3.69 "	
"	May .....	2.23 "	
"	August .....	4.24 "	
"	December .....	5.22 "	
"	January of same year .....	2.10 "	
"	February .....	2.64 "	
	Crop of 1859.....	below average.....	12 per cent.
	" 1860.....	" " .....	5 "
	No. of hhds. per inch of rain, 1859.....	877	
	" " " 1860.....	787	
1860	Rainfall of same year .....	57.91 inches.....	average
"	preceding year .....	54.22 "	below 6 per cent.
"	first half of preceding year .....	16.44 "	
"	September .....	4.80 "	
"	July .....	5.72 "	
"	May .....	3.56 "	
"	August .....	3.21 "	
"	December .....	3.74 "	
"	January of same year .....	2.28 "	
"	February .....	2.85 "	
	Crop of 1860.....	below average.....	5 per cent.
	" 1861.....	above " .....	10 "
	No. of hhds. per inch of rain, 1860.....	787	
	" " " 1861.....	859	
1861	Rainfall of same year .....	71.82 inches.....	above 28 per cent.
"	preceding year .....	57.91 "	average
"	first half of preceding year .....	12.36 "	
"	September .....	7.31 "	
"	July .....	3.90 "	
"	May .....	.66 "	
"	August .....	7.93 "	
"	December .....	5.09 "	
"	January of same year .....	3.49 "	
"	February .....	1.96 "	
	Crop of 1861.....	above average.....	10 per cent.
	" 1862.....	" " .....	2 "
	No. of hhds. per inch of rain, 1861.....	859	
	" " " 1862.....	624	

Compared  
with average.

1862	Rainfall of same year .....	59.27 inches.....	above 3 per cent.
	" preceding year .....	71.82 "	28 "
	" first half of preceding year .....	31.93 "	
	" September .....	6.77 "	
	" July .....	8.28 "	
	" May .....	8.01 "	
	" August .....	4.65 "	
	" December .....	7.11 "	
	" January of same year .....	7.60 "	
	" February .....	1.12 "	
Crop of 1862.....		above average.....	2 per cent.
" 1863.....		below ", .....	6 "
No. of hds. per inch of rain, 1862.....		624	
" " " 1863.....		713	
1863	Rainfall of same year .....	42.38 inches.....	below 27 per cent.
	" preceding year .....	59.27 "	above 3 "
	" first half of preceding year .....	20.86 "	
	" September .....	4.74 "	
	" July .....	5.39 "	
	" May .....	3.53 "	
	" August .....	7.23 "	
	" December .....	2.36 "	
	" January of same year .....	1.19 "	
	" February .....	3.88 "	
Crop of 1863.....		below average.....	6 per cent.
" 1864.....		19 "	
No. of hds. per inch of rain, 1863.....		713	
" " " 1864.....		854	
1864	Rainfall of same year .....	59.19 inches.....	above 2 per cent.
	" preceding year .....	42.38 "	below 27 "
	" first half of preceding year .....	11.77 "	
	" September .....	4.99 "	
	" July .....	3.65 "	
	" May .....	.56 "	
	" August .....	9.34 "	
	" December .....	3.27 "	
	" January of same year .....	2.74 "	
	" February .....	2.47 "	
Crop of 1864.....		below average.....	19 per cent.
" 1865.....		above ", .....	2 "
No. of hds. per inch of rain, 1864.....		854	
" " " 1865.....		778	
1865	Rainfall of same year .....	68.64 inches.....	above 19 per cent.
	" preceding year .....	59.19 "	2 "
	" first half of preceding year .....	11.88 "	
	" September .....	10.77 "	
	" July .....	7.51 "	
	" May .....	3.07 "	
	" August .....	7.37 "	
	" December .....	6.16 "	
	" January of same year .....	2.36 "	
	" February .....	2.19 "	
Crop of 1865.....		above average.....	2 per cent.
" 1866.....		27 "	
No. of hds. per inch of rain, 1865.....		778	
" " " 1866.....		833	

		Compared with average.
1866	Rainfall of same year .....	59.68 inches.....above 4 per cent.
"	preceding year .....	68.64 " ..... 19 "
"	first half of preceding year .....	25.18 "
"	September .....	5.07 "
"	July .....	7.35 "
"	May .....	5.89 "
"	August .....	8.91 "
"	December .....	6.58 "
"	January of same year .....	3.75 "
"	February .....	2.75 "
	Crop of 1866.....above average.....	27 per cent.
	" 1867....., , ,	14 "
	No. of hhds. per inch of rain, 1866.....	833
	" " " 1867.....	859
1867	Rainfall of same year .....	69.93 inches.....above 21 per cent.
"	preceding year .....	59.68 " ..... 4 "
"	first half of preceding year .....	14.70 "
"	September .....	4.22 "
"	July .....	6.23 "
"	May .....	2.74 "
"	August .....	11.89 "
"	December .....	5.80 "
"	January of same year .....	2.68 "
"	February .....	4.49 "
	Crop of 1867.....above average.....	14 per cent.
	" 1868....., , ,	29 "
	No. of hhds. per inch of rain, 1867.....	859
	" " " 1868.....	836
1868	Rainfall of same year .....	44.60 inches.....below 24 per cent.
"	preceding year .....	69.93 " ..... above 21 "
"	first half of preceding year .....	23.29 "
"	September .....	8.54 "
"	July .....	7.50 "
"	May .....	2.66 "
"	August .....	9.62 "
"	December .....	3.89 "
"	January of same year .....	4.29 "
"	February .....	1.74 "
	Crop of 1868.....above average.....	29 per cent.
	" 1869.....below " .....	28 "
	No. of hhds. per inch of rain, 1868.....	836
	" " " 1869.....	720
1869	Rainfall of same year .....	48.52 inches.....below 16 per cent.
"	preceding year .....	44.60 " ..... 24 "
"	first half of preceding year .....	14.06 "
"	September .....	4.63 "
"	July .....	6.26 "
"	May .....	1.68 "
"	August .....	5.62 "
"	December .....	1.40 "
"	January of same year .....	1.53 "
"	February .....	1.47 "
	Crop of 1869.....below average.....	28 per cent.
	" 1870....., , ,	13 "
	No. of hhds. per inch of rain, 1869.....	720
	" " " 1870.....	809

Compared  
with average.

1870	Rainfall of same year .....	60.17 inches.....	above 4 per cent.
"	preceding year .....	48.52 "	below 16 "
"	first half of preceding year .....	14.74 "	
"	September .....	4.56 "	
"	July .....	4.42 "	
"	May .....	4.32 "	
"	August .....	6.95 "	
"	December .....	5.73 "	
"	January of same year .....	3.96 "	
"	February .....	1.35 "	
	Crop of 1870.....	below average.....	13 per cent.
	" 1871.....	above " .....	20 "
	No. of hhds. per inch of rain, 1870.....	809	
	" " " 1871.....	895	
1871	Rainfall of same year .....	41.46 inches.....	below 28 per cent.
"	preceding year .....	60.17 "	above 4 "
"	first half of preceding year .....	20.09 "	
"	September .....	5.03 "	
"	July .....	5.62 "	
"	May .....	2.80 "	
"	August .....	5.61 "	
"	December .....	3.38 "	
"	January of same year .....	4.13 "	
"	February .....	2.29 "	
	Crop of 1871.....	above average.....	20 per cent.
	" 1872.....	below " .....	13 "
	No. of hhds. per inch of rain, 1871.....	895	
	" " " 1872.....	944	
1872	Rainfall of same year .....	48.36 inches.....	below 16 per cent.
"	preceding year .....	41.46 "	28 "
"	first half of preceding year .....	11.74 "	
"	September .....	6.70 "	
"	July .....	3.65 "	
"	May .....	.98 "	
"	August .....	5.37 "	
"	December .....	4.08 "	
"	January of same year .....	2.10 "	
"	February .....	2.36 "	
	Crop of 1872.....	below average.....	13 per cent.
	No. of hhds. per inch of rain, 1872.....	944	

## APPENDIX No. 41.

*Statement of the Dates of First Shipment, and of the Shipment of the first 1,000 hds. of Sugar from Barbados, with Classification of the Season, with early and late Crops, in each Year from 1847 to 1872.*

Years.	Date of First Shipment.	Dates of Shipping the first 1,000 hds.	Classification of Season.				
			Very Early.	Early.	Average.	Late.	Very Late.
1847	January 21	January 21 to February 8	1	...	...	1	...
8	February 18	February 18, March 11	...	...	...	...	...
9	January 21	January 21, February 20	1	...	...	...	...
50	22	22 " February 7	1	...	...	...	...
1	" 18	" 18 " February 4	1	...	...	...	...
2	17	17 " January 31	1	...	...	1	...
3	February 12	February 12, February 22	...	...	...	...	...
4	January 19	January 19, January 26	1	...	...	1	...
5	February 17	February 17, March 6	...	...	...	...	...
6	January 23	January 23, January 29	1	...	...	...	...
7	February 14	February 14, February 18	...	...	1	...	...
8	10	10 " 18	...	...	1	...	...
9	March 7	March 7, March 9	...	...	...	1	...
60	February 6	February 6, February 21	...	...	1	...	...
1	" 17	" 17, March 4	...	...	...	1	...
2	January 31	January 31, February 22	...	...	1	...	...
3	February 14	February 14, 25	...	...	1	...	...
4	March 9	March 9, March 12	...	...	...	1	...
5	6	6 " 20	...	...	...	1	...
6	February 7	February 7, February 17	...	...	1	...	...
7	" 22	" 22, March 3	...	...	...	1	...
8	8	8 " February 19	...	...	1	...	...
9	March 1	March 1, March 8	...	...	...	1	...
70	February 22	February 22, 28	...	...	...	1	...
1	21	21 " 7	...	...	1	...	...
2	March 4	March 4, 21	...	...	...	1	...
		Total.....*	7	...	8	6	5

## APPENDIX No. 42.

*Order of Years as regards First Shipments of Sugar, with character of the Crop of the Season,  
1847-72.*

Years.	Date of First Shipment.	Crop of Year.	
		Percentage below Average.	Percentage above Average.
1852.....	January 17.....	25	
51.....	" 18.....		average
54.....	" 19.....	17	
47.....	" 21.....		12
49.....	" 21.....		9
50.....	" 22.....		9
56.....	" 23.....	11	
60.....	February 6.....		5
66.....	" 7.....	27	
68.....	" 8.....	29	
58.....	" 10.....	13	
53.....	" 12.....		average
57.....	" 14.....		14
63.....	" 14.....		6
55.....	" 17.....	1	
61.....	" 17.....	10	
48.....	" 18.....		27
71.....	" 21.....	20	
67.....	" 22.....	14	
70.....	" 22.....		13
69.....	March 1.....		28
72.....	" 4.....		16
65.....	" 6.....	2	
59.....	" 7.....		12
64.....	" 9.....		19

## ABSTRACT.

January 17-23.....	7 years.....	1847	1850	1852	1856
		1849	1851	1854	
February 6-22.....	13 ,,,	1848	1858	1863	1868
		1853	1860	1866	1870
		1855	1861	1867	1871
		1857			
March 1-9.....	5 ,,,	1859	1865	1872	
		1864	1869		

## APPENDIX No. 43.

*Statement showing, in the six Wettest and six Driest Instances of each Month, the Character of the Seasons by which they were followed.*

NOTE.—In this Statement the eight Years classed as Average in Appendix No. 41 are included in the categories of Early or Late, according as they exceeded, though by small amounts, the exact half of the whole period.

Months.		Season of Crop by which followed.							
		In same Year.				In following Year.			
		Very Early	Early	Late	Very Late	Very Early	Early	Late	Very Late
January .....	6 wettest years	...	1	5	...	1	1	3	1
" .....	6 driest "	3	...	2	1	2	...	2	2
February .....	6 wettest "	1	...	5	...	3	...	2	1
" .....	6 driest "	2	1	2	1	...	...	5	1
March .....	6 wettest "	...	...	...	...	3	1	1	1
" .....	6 driest "	...	...	...	...	1	...	4	1
April .....	6 wettest "	...	...	...	...	2	2	2	...
" .....	6 driest "	...	...	...	...	...	...	2	4
May .....	6 wettest "	...	...	...	...	4	1	1	...
" .....	6 driest "	...	...	...	...	...	...	3	3
June .....	6 wettest "	...	...	...	...	1	2	3	...
" .....	6 driest "	...	...	...	...	1	...	3	2
July .....	6 wettest "	...	...	...	...	2	2	1	1
" .....	6 driest "	...	...	...	...	...	...	3	3
August .....	6 wettest "	...	...	...	...	2	1	2	1
" .....	6 driest "	...	...	...	...	1	...	3	2
September .....	6 wettest "	...	...	...	...	2	...	3	1
" .....	6 driest "	...	...	...	...	1	...	4	1
October .....	6 wettest "	...	...	...	...	1	...	5	...
" .....	6 driest "	...	...	...	...	2	...	1	3
November .....	6 wettest "	...	...	...	...	1	...	5	...
" .....	6 driest "	...	...	...	...	2	1	1	2
December .....	6 wettest "	...	...	...	...	2	2	1	1
" .....	6 driest "	...	...	...	...	1	...	3	2

APPENDIX NO. 44.

*Meteorological Observations taken at Bingfield, in the Parish of St. Joseph, Barbados, by Dr. R. Bowie Walcott. Height, 1,064 feet above the sea.*

## APPENDIX NO. 45.

*Statement of the Number of Days on which Rain fell in each Month, at Binfield, Husbands, and Halton, separately and in combination, and on which no Rain fell at any of the three Stations, in the 19 years from 1854 to 1872.*

N.B.—The Return from Binfield ended July, 1871

## JANUARY.

Years.	Separately.			Binfield and Husbands together.	Binfield and Halton together.	Husbands and Halton together.	All three Stations together.	No rain at any of the three Stations.
	Binfield.	Husbands.	Halton.					
1854	6	1	3	...	7	1	8	5
5	3	..	1	2	6	1	11	9
6	2	2	2	2	1	2	4	16
7	3	1	5	1	5	..	11	5
8	1	2	4	5	2	4	3	10
9	4	2	3	7	2	..	7	6
60	4	2	3	1	4	2	9	6
1	1	4	3	..	2	2	11	8
2	1	1	1	1	1	4	18	4
3	..	4	4	1	2	2	14	14
4	1	..	3	1	3	2	18	3
5	2	1	3	1	2	2	10	12
6	1	3	4	2	5	1	12	3
7	1	3	2	1	1	3	11	9
8	2	4	4	1	1	2	14	3
9	1	5	3	2	3	2	9	6
70	2	2	3	2	3	4	15	2
1	4	1	..	2	3	..	18	3
2	4	..	2	3	6	1	7	8
Total	43	38	53	33	57	33	200	132

## FEBRUARY.

1854	3	1	..	1	8	3	6	7
5	2	..	1	2	9	3	6	7
6	..	4	2	..	3	..	10	9
7	3	1	3	3	3	2	15	2
8	6	1	5	5	2	1	5	6
9	2	3	2	2	2	2	8	4
60	3	2	3	1	1	2	10	5
1	1	3	5	5	7	7	5	8
2	2	1	1	2	7	1	3	6
3	..	5	4	..	7	5	12	2
4	1	1	2	3	1	1	12	9
5	..	4	2	3	4	1	7	9
6	..	2	5	1	2	2	11	6
7	..	2	2	..	7	7	5	7
8	..	2	2	2	4	1	5	13
9	1	2	1	1	1	3	7	7
70	6	2	1	1	1	3	7	7
1	2	2	..	4	2	..	11	9
2	4	..	2	1	5	..	9	8
Total	38	36	45	26	73	34	156	131

APPENDIX No. 45—*continued.*

## MARCH.

Years.	Separately.			Binfield and Husbands together.	Binfield and Halton together.	Husbands and Halton together.	All three Stations together.	No rain at any of the three Stations.
	Binfield.	Husbands.	Halton.					
1854	2	3	2	5	5	2	4	13
5	1	1	4	1	4	1	5	19
6	1	1	2	1	3	2	3	15
7	1	1	2	1	3	3	3	15
8	1	2	2	1	3	3	3	15
9	8	2	3	1	4	3	2	11
60	3	1	5	1	2	2	10	17
1	3	1	3	1	1	4	8	8
2	3	2	2	3	1	4	10	21
3	2	2	2	1	1	4	8	8
4	2	2	2	1	1	3	1	19
5	1	2	5	1	2	2	5	13
6	1	2	5	1	2	2	4	14
7	2	2	5	1	2	2	3	11
8	2	2	2	2	1	2	5	9
9	1	3	3	2	2	2	4	14
70	1	2	4	1	1	1	4	14
1	2	5	2	2	1	1	8	13
Total	39	41	65	28	63	26	79	250

## APRIL.

1854	3	1	1	2	2	1	5	18
5	3	5	2	2	1	4	6	9
6	1	1	2	1	2	1	4	16
7	5	3	2	2	1	2	4	15
8	2	2	1	2	2	1	3	11
9	3	2	1	2	2	2	6	15
60	1	1	1	1	1	1	1	9
1	2	1	2	2	2	2	1	14
2	3	1	2	2	2	2	1	14
3	3	1	2	2	2	2	5	7
4	5	5	2	2	2	2	1	16
5	1	5	2	4	1	1	10	5
6	1	1	2	2	1	1	1	17
7	1	2	5	2	1	1	6	12
8	2	5	2	2	1	1	8	16
9	2	2	2	2	1	1	3	10
70	1	2	2	2	1	1	4	17
1	2	4	1	1	1	1	2	9
Total	47	40	1	21	53	32	83	233

APPENDIX No. 45—*continued.*

## MAY.

Years.	Separately.			Binfield and Husbands together.	Binfield and Halton together.	Husbands and Halton together.	All three stations together.	No rain at any of the three stations.
	Binfield.	Husbands.	Halton.					
1854	5	...	5	1	5	2	3	10
5	2	1	4	4	3	3	7	10
6	...	2	4	1	1	...	7	18
7	3	3	5	1	3	2	5	10
8	1	3	6	3	3	3	6	6
9	4	2	5	1	2	2	9	7
60	3	3	5	1	2	1	1	22
1	1	3	3	1	1	2	17	3
2	1	3	4	2	3	1	7	10
3	1	3	4	1	1	1	3	18
4	1	3	5	2	2	1	5	13
5	1	1	5	1	1	2	15	7
6	1	3	7	1	4	...	6	9
7	2	3	1	2	2	2	9	10
8	2	2	2	1	2	1	4	18
9	1	4	2	2	5	...	12	6
70	1	1	3	2	2	3	9	13
1	5	1	1	2	3	2	3	14
2	4	3	3	1	4	1	4	11
Total	39	41	66	22	50	24	132	215

## JUNE.

1854	4	...	4	1	3	3	14	5
5	2	...	4	1	4	3	12	4
6	5	1	4	2	7	2	9	4
7	1	2	4	2	6	8	7	4
8	1	2	2	3	4	2	11	10
9	2	...	1	...	3	5	8	4
60	...	2	7	...	2	3	15	8
1	2	4	2	1	6	6	13	2
2	2	1	4	...	4	1	6	10
3	1	2	2	1	5	1	13	13
4	2	2	2	1	3	1	17	2
5	2	...	2	1	1	1	7	10
6	...	3	4	3	4	1	20	1
7	...	1	6	1	3	1	8	2
8	...	7	2	2	4	2	8	1
9	2	3	2	2	4	2	12	2
70	2	6	2	4	1	1	13	3
1	2	1	4	3	4	1	10	3
2	2	1	4	1	3	4	8	7
Total	34	37	54	23	61	62	203	96

APPENDIX No. 45—*continued.*

## JULY.

Years.	Separately.			Binfield and Husbands together.	Binfield and Halton together.	Husbands and Halton together.	All three stations together.	No rain at any of the three stations.
	Binfield.	Husbands.	Halton.					
1854	3	1	3	2	2	3	15	2
5	1	1	3	2	4	5	11	1
6	1	2	2	3	1	1	11	5
7	1	2	6	1	1	6	11	8
8	2	2	1	2	4	17	12	6
9	4	2	6	2	2	12	9	6
60	2	2	1	1	4	10	12	3
1	3	1	6	1	2	11	10	8
2	..	1	6	1	2	20	12	3
3	..	3	4	2	1	18	10	5
4	1	2	4	1	3	17	7	7
5	..	2	4	2	2	15	15	1
6	..	3	2	3	3	6	11	..
7	..	1	1	1	2	16	16	6
8	2	3	6	1	2	11	11	1
9	3	3	3	2	3	16	16	5
70	1	2	2	1	4	11	11	3
1	2	6	1	2	4	5	5	7
Total	32	31	62	31	53	57	233	90

## AUGUST.

1854	2	1	2	1	2	6	3	10	5
5	1	3	1	1	3	2	3	21	2
6	3	..	5	..	6	4	1	9	7
7	..	..	1	..	1	3	2	16	5
8	..	4	1	..	6	10	3	10	2
9	4	2	1	1	3	6	1	5	8
60	2	2	4	2	1	4	2	4	4
1	3	3	6	4	2	2	3	12	6
2	..	3	1	2	2	3	2	15	4
3	..	3	1	1	2	3	3	12	2
4	..	1	1	1	2	2	1	22	8
5	1	3	2	1	1	3	1	17	..
6	3	1	2	2	2	5	5	17	2
7	1	1	3	1	1	2	1	17	3
8	1	1	3	1	1	4	2	12	7
9	2	2	2	1	1	4	1	10	3
70	1	1	3	2	1	3	1	15	6
1	4	..	2	2	3	3	1	15	1
Total	31	32	51	23	60	48	238	75	

APPENDIX No. 45—*continued.*

## SEPTEMBER.

Years.	Separately.			Binfield and Husbands together.	Binfield and Halton together.	Husbands and Halton together.	All three stations together.	No rain at any of the three stations.
	Binfield.	Husbands.	Halton.					
1854	...	3	15	3	5	3	13	2
5	...	...	2	2	5	1	13	4
6	2	...	2	2	7	1	9	7
7	2	...	2	2	3	5	14	2
8	2	2	...	3	5	2	8	8
9	4	2	3	4	4	1	10	2
60	1	1	1	2	2	6	15	2
1	2	2	4	4	2	4	7	7
2	...	1	1	...	6	5	8	7
3	1	1	3	3	4	1	11	6
4	2	2	...	4	1	2	16	7
5	2	2	2	2	4	2	8	10
6	2	4	...	1	2	4	9	6
7	1	3	2	2	2	1	18	2
8	1	2	2	5	3	4	6	7
9	3	2	3	3	7	...	6	6
70	4	1	1	2	2	4	12	8
1	...	1	2	1	7	4	10	5
Total	29	28	34	41	71	46	193	98

## OCTOBER.

1854	2	...	4	5	3	...	12	5
5	1	...	2	1	5	1	11	10
6	2	1	4	2	2	2	9	9
7	...	1	3	...	4	3	11	7
8	2	1	1	1	3	2	15	...
9	1	2	1	2	7	1	17	3
60	1	2	2	1	1	3	19	8
1	...	3	4	...	4	3	15	7
2	...	2	4	4	5	4	10	3
3	...	...	5	2	4	3	12	1
4	...	1	1	2	5	4	14	3
5	2	2	4	2	3	2	10	6
6	3	3	2	1	2	1	14	4
7	3	3	2	2	1	2	16	8
8	3	2	1	1	1	2	14	5
9	1	2	2	1	1	2	15	3
70	2	2	...	3	4	1	14	5
1	5	...	...	3	4	2	14	3
Total	28	20	42	30	61	43	236	98

APPENDIX No. 45—*continued.*

## NOVEMBER.

Years.	Separately.			Binfield and Husbands together.	Binfield and Halton together.	Husbands and Halton together.	All three stations together.	No rain at any of the three stations.
	Binfield.	Husbands.	Halton.					
1854	1	..	5	..	3	1	11	9
5	1	1	2	4	5	1	11	5
6	2	..	1	3	5	1	14	4
7	1	..	3	..	6	1	14	5
8	1	1	3	1	5	3	11	5
9	1	1	2	..	4	4	15	3
60	1	1	3	..	2	3	11	9
1	2	1	3	1	7	..	12	3
2	..	3	2	2	3	5	9	3
3	2	..	2	2	5	4	12	3
4	..	1	2	1	1	3	17	5
5	..	4	4	..	1	..	7	14
6	1	1	3	1	5	5	12	2
7	2	1	3	3	4	2	6	9
8	2	..	1	2	2	..	11	12
9	5	1	2	1	2	5	9	5
70	2	2	2	2	2	2	11	7
1	1	1	2	2	4	..	14	6
Total	25	20	48	25	66	40	207	109

## DECEMBER.

1854	2	1	4	..	9	1	8	7
5	1	1	2	1	6	1	10	9
6	1	..	6	2	3	3	10	6
7	..	1	4	1	4	3	9	9
8	1	1	3	3	6	..	14	3
9	1	..	4	1	4	1	8	12
60	2	1	5	2	2	1	10	8
1	5	..	3	2	3	1	9	8
2	1	3	6	..	1	1	6	13
3	3	2	1	2	5	3	9	6
4	..	3	..	1	2	3	15	7
5	..	..	7	..	4	2	14	4
6	..	..	5	1	1	2	15	7
7	..	2	2	1	2	4	14	6
8	..	1	3	1	4	1	9	12
9	1	4	2	..	5	3	9	7
70	1	4	2	3	5	..	10	6
1	1	..	3	1	6	1	11	8
Total	20	24	62	22	72	31	190	138

## APPENDIX No. 46

*Statement of the Number of Days on which Rain fell at each of three Stations—Binfield (A), Husbands (B), and Halton (C)—in each Month of the Eighteen Years, 1854–71.*

YEARS.	January.			February.			March.			April.			May.			June.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1854	21	10	19	18	11	17	16	14	18	6	10	9	14	6	15	22	18	20
5	20	12	19	17	9	19	11	8	15	17	9	14	13	13	18	19	16	23
6	9	10	9	13	14	15	8	4	10	8	8	9	9	8	12	21	16	20
7	20	13	21	21	18	23	11	10	14	9	7	12	12	10	15	11	20	22
8	11	14	13	12	7	13	6	5	14	13	2	12	13	15	18	14	11	17
9	20	16	12	15	16	14	15	5	10	11	7	9	15	13	18	20	19	21
60	18	14	18	20	20	14	8	4	9	13	10	17	6	4	3	10	13	20
1	14	17	18	16	11	17	16	16	20	18	20	21	20	23	23	16	23	24
2	21	24	24	14	7	15	4	6	4	7	9	10	13	13	15	17	18	23
3	7	11	12	13	22	18	11	14	19	9	18	15	5	7	9	13	12	14
4	23	21	26	18	16	21	10	2	9	10	3	7	10	10	12	9	13	13
5	15	12	15	14	11	15	8	10	15	16	15	22	18	19	21	23	21	23
6	20	18	22	14	16	18	7	12	11	3	9	8	12	10	17	12	12	16
7	14	18	17	11	13	16	12	13	10	8	15	11	15	16	14	26	25	26
8	18	21	21	12	12	21	15	11	16	11	12	9	8	7	9	13	18	26
9	15	18	17	12	10	11	9	11	11	12	7	12	20	18	18	24	18	26
70	20	23	23	15	13	12	8	7	9	8	8	8	14	12	14	21	20	21
1	27	21	21	19	17	13	11	10	11	11	4	12	13	8	9	21	18	15
Total	313	293	327	274	243	292	186	162	220	190	173	217	230	212	260	306	311	362
YEARS.	July.			August.			September.			October.			November.			December.		
1854	22	21	23	20	17	20	21	22	22	22	17	19	15	12	20	18	10	22
5	21	18	27	24	25	27	20	16	24	18	13	19	21	17	19	18	13	19
6	19	18	19	19	15	16	20	12	19	15	14	17	24	18	21	16	15	22
7	9	15	19	19	23	21	21	21	24	15	15	21	21	15	24	14	14	20
8	25	19	21	21	14	28	18	15	15	20	18	21	18	16	22	24	18	23
9	20	18	17	15	7	18	22	17	18	27	22	26	20	20	25	14	10	17
60	16	16	23	25	19	22	20	24	24	23	26	23	14	15	19	16	14	18
1	18	17	19	12	15	19	14	17	15	19	18	19	22	16	21	19	12	16
2	12	14	19	14	19	23	14	14	22	14	16	22	14	18	23	8	10	14
3	17	18	21	23	19	23	20	16	19	17	15	20	21	18	23	19	16	18
4	24	22	22	18	17	20	19	20	19	20	19	26	19	22	23	18	22	20
5	21	23	28	25	29	28	14	14	16	19	22	25	8	11	12	18	16	27
6	21	25	26	21	24	24	14	18	17	18	19	22	19	19	26	17	18	23
7	19	22	21	23	23	22	22	23	23	21	18	20	15	12	15	17	21	22
8	11	20	23	15	19	21	15	17	15	21	19	22	17	13	14	14	12	17
9	16	17	19	17	16	22	20	11	16	18	19	19	17	16	18	15	16	19
70	21	20	22	18	18	21	20	15	15	22	19	21	17	17	17	18	17	17
1	21	18	20	24	21	21	18	16	23	26	19	20	21	18	19	19	13	21
Total	333	341	389	353	340	416	332	308	346	355	328	382	323	293	361	302	267	355

## APPENDIX No. 47.

*Statement of the No. of Inches of Rain that fell at each of three Stations, Binfield (A), Husbands (B), and Halton (C), in each Month of the Eighteen Years, 1854-1871.*

YEARS.	January.			February.			March.			April.			May.			June.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1854	2.63	1.85	2.24	2.69	.84	1.69	2.	1.54	.99	1.23	1.02	.82	1.37	1.55	1.25	7.26	5.49	5.19
5	8.52	5.21	5.64	4.22	1.25	2.61	2.17	2.12	1.37	6.63	3.93	4.20	7.32	5.20	7.22	8.35	5.74	7.23
6	1.01	1.68	2.14	2.24	2.06	1.85	1.30	1.15	1.24	1.10	1.29	.53	3.66	2.41	3.16	5.74	4.94	5.68
7	3.10	1.84	2.42	6.11	5.51	4.31	3.30	2.52	1.69	1.14	4.87	1.61	3.14	7.48	1.63	5.40	6.09	5.27
8	1.61	1.28	1.54	1.52	2.89	1.29	.58	.75	1.92	.82	.18	.96	2.64	1.94	2.33	6.62	2.62	4.43
9	2.60	1.21	2.12	2.97	1.94	2.38	1.04	.50	1.62	.66	.70	1.94	3.25	2.83	4.54	6.43	4.31	4.96
60	3.06	1.48	2.27	4.05	2.97	2.54	1.08	.31	1.25	2.71	.98	3.14	.82	.74	.15	3.93	2.99	3.12
1	4.09	2.96	4.12	2.60	3.18	1.50	3.21	1.30	2.63	11.62	7.50	4.69	9.92	8.17	8.70	9.20	8.89	8.52
2	8.96	5.40	6.29	1.68	1.12	1.13	.37	.34	.09	1.42	1.34	1.47	3.28	3.43	4.28	8.73	5.72	6.25
3	1.05	.86	1.19	5.24	4.07	3.96	3.73	1.19	2.81	2.49	2.20	2.06	.53	1.13	.66	2.20	1.66	1.62
4	3.48	3.07	2.38	2.38	1.62	2.55	1.04	.26	.64	.80	.29	.64	3.46	.3	.66	2.50	1.19	1.74
5	2.89	2.94	2.09	2.30	1.44	2.55	1.26	1.37	1.48	4.22	2.08	5.34	9.16	7.77	4.77	10.73	9.08	7.70
6	4.19	2.44	3.46	3.24	2.57	2.92	2.25	1.51	1.49	1.17	1.98	1.46	2.36	2.49	3.16	2.04	2.77	2.36
7	3.97	3.13	2.32	5.96	3.82	4.49	1.66	.62	.69	1.74	2.10	2.15	5.19	1.80	3.29	14.10	10.54	9.11
8	5.68	3.09	3.97	2.11	.96	2.08	2.71	.89	3.78	1.56	.77	.51	2.60	1.54	1.54	3.73	2.82	4.76
9	2.01	1.45	1.54	2.02	1.17	1.28	1.19	1.09	1.14	3.19	2.62	4.14	5.28	2.21	6.22	3.42	3.70	3.62
70	4.57	4.78	4.34	1.72	1.18	1.38	.87	.83	.81	1.23	.52	1.25	4.04	4.50	2.64	13.55	13.59	10.66
1	5.	4.34	4.08	3.	1.51	2.46	1.24	1.77	.89	1.09	.14	.75	.91	1.33	.99	3.67	1.33	2.84
YEARS.	July.			August.			September.			October.			November.			December.		
1854	6.67	7.89	4.74	4.35	4.12	4.50	4.36	3.67	3.94	6.88	8.54	5.32	10.52	14.76	10.44	3.83	3.28	3.93
5	8.32	7.42	8.06	16.20	12.31	14.70	13.11	8.84	6.96	6.52	5.40	4.	8.11	5.37	6.26	5.53	4.25	5.09
6	2.79	5.03	2.08	8.06	8.17	8.42	5.93	4.80	5.30	7.81	3.04	6.49	11.59	8.14	5.33	5.51	4.41	4.15
7	7.58	7.65	5.91	5.74	11.67	3.75	9.79	9.01	6.40	5.55	4.99	7.19	13.19	10.17	7.24	3.62	2.15	3.42
8	5.70	4.92	3.19	4.31	3.30	3.94	4.54	4.70	2.58	11.83	9.07	10.77	6.77	5.80	5.59	7.96	4.05	5.30
9	6.53	4.57	5.43	2.26	3.90	3.21	5.06	4.96	4.60	11.28	7.02	9.82	11.36	6.22	11.43	3.29	2.73	3.03
60	2.47	3.99	3.02	8.67	10.98	7.20	8.25	11.70	5.88	14.33	8.02	19.06	7.89	8.30	8.18	5.92	4.94	4.65
1	8.49	9.07	7.71	6.25	3.25	4.34	8.04	10.27	6.23	8.47	16.62	6.33	13.64	8.91	7.80	5.33	5.21	8.50
2	6.21	3.68	4.64	6.15	8.10	6.38	3.56	3.01	6.59	11.18	18.84	9.14	8.20	10.98	6.44	2.65	2.65	1.96
3	4.69	4.20	3.57	12.62	5.99	12.45	8.10	4.66	4.66	3.97	2.68	2.55	6.82	7.84	6.66	4.68	3.21	3.08
4	8.90	7.11	6.72	8.40	8.92	6.42	12.62	10.47	10.34	8.18	12.55	9.24	4.36	12.12	7.67	7.66	3.57	6.22
5	9.45	6.95	7.31	8.93	9.74	8.84	5.56	3.33	6.55	11.92	16.42	11.49	4.18	5.52	3.42	6.30	6.20	7.17
6	8.30	7.15	6.48	11.97	10.01	12.14	5.19	4.87	3.62	10.42	5.80	9.13	7.98	5.11	7.55	6.48	5.44	5.47
7	9.16	7.88	7.26	11.22	11.20	9.70	10.01	9.72	9.54	12.95	10.43	12.03	5.25	3.55	3.17	4.45	3.88	3.81
8	9.06	7.60	5.45	5.69	3.94	5.46	5.16	8.40	4.76	9.88	5.61	11.46	5.09	2.73	5.03	2.57	3.60	1.24
9	6.49	3.60	4.76	6.35	6.52	6.18	5.80	10.28	4.41	7.46	12.58	7.49	6.32	4.95	4.64	9.14	6.	4.43
70	6.44	5.03	5.56	5.93	9.04	8.07	6.06	6.19	3.20	14.83	12.92	10.	9.42	5.76	8.11	4.32	3.56	3.70
1	4.34	3.09	3.49	6.39	9.60	5.69	8.71	4.81	7.59	7.	4.53	7.29	3.81	4.53	3.99	5.11	3.43	4.96

NOTE.—The total Yearly Rainfall of each of these Stations will be found in Appendix No. 21.

APPENDIX No. 48.

*Abstract of the two preceding Tables, showing the Number of Days on which Rain fell at each of the Three Stations, separately or otherwise; the Total Number of Days with and without Rain; the Average Monthly Rainfall, and the Average Rainfall on each Rainy Day at each Station in each Month, on the Aggregate or Average of the Fifteen Years, 1854 to 1872.*

N.B.—The Return from Binfield ended with July 1871.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Total Number of Days in the Period observed .....	589	589	570	589	570	589	589	558	540	558	540	558	6,789
Number of Days with Rain:													
At Binfield alone .....	43	38	39	47	39	34	32	31	29	28	25	20	405
Husbands , ,	38	36	41	40	41	37	31	32	28	20	20	24	388
Halton , ,	53	45	65	61	66	54	62	51	34	42	48	61	642
Binfield and Husbands .....	33	26	26	21	22	23	31	23	41	39	25	22	323
Husbands and Halton .....	33	34	26	32	24	62	57	48	46	43	40	31	476
Halton and Binfield .....	57	73	63	53	50	61	53	60	71	61	66	72	740
All Three Stations .....	200	156	79	83	132	203	233	238	193	236	207	190	2,150
Total Days with Rain :													
At Binfield .....	333	293	207	204	243	321	349	352	334	355	323	304	3,618
Husbands .....	304	252	172	176	219	325	352	341	308	329	292	267	3,337
Halton .....	343	308	285	229	272	380	405	397	344	332	361	354	4,010
Total Days without Rain :													
At Binfield .....	256	246	382	366	346	249	240	206	203	217	254	3,171	
Husbands .....	285	287	417	394	370	245	287	217	232	229	248	291	3,452
Halton .....	246	231	364	341	317	190	184	161	196	178	204	2,779	
Any Station .....	132	131	250	283	215	96	90	75	98	98	109	138	1,665

## APPENDIX NO. 48—continued.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
<b>Average in each Month of Days with Rain, 1854-71:</b>													
At Binfield .....	17	15	10	11	13	17	18	20	18	20	18	17	194
Husbands .....	16	13	9	10	12	17	19	19	17	18	16	15	181
Halton .....	18	16	12	12	14	20	22	23	19	21	20	20	217
<b>Average in each Month of Days without Rain:</b>													
At Binfield .....	14	13	21	19	18	18	13	13	11	12	11	12	14
Husbands .....	15	15	22	20	19	13	12	12	12	13	13	14	16
Halton .....	18	12	19	18	17	10	9	8	11	10	10	11	148
Any Station .....	7	7	14	13	12	5	5	4	5	5	6	8	91
<b>QUANTITIES OF RAIN.</b>													
<b>Average Number of Inches in each Month:</b>													
At Binfield .....	3.74	3.20	1.76	2.51	3.71	6.34	6.58	7.97	7.88	9.47	8.03	5.24	66.43
Husbands .....	2.63	2.27	1.07	1.82	3.23	5.14	5.73	7.48	6.68	8.89	7.33	4.08	56.35
Halton .....	2.96	2.40	1.48	2.07	3.23	5.17	5.14	7.15	5.99	8.65	6.72	4.62	55.58
<b>Average Rainfall on each Rainy Day:</b>													
At Binfield .....	.22	.21	.17	.23	.28	.37	.37	.40	.44	.47	.45	.31	.34
Husbands .....	.10	.17	.13	.18	.27	.30	.30	.39	.39	.49	.46	.27	.31
Halton .....	.16	.15	.12	.17	.23	.26	.26	.31	.31	.41	.33	.23	.26

**APPENDIX No. 49.**

*Statement of the Percentage Proportion of the Yearly Rain which fell in each Month at the three Stations, Binfield, Huslands, and Halton, separately and conjointly, and of the Months in which no Rain fell at any of those Stations, 1854-72.*

MONTHS.	General.	Partial.			Binfield and Huslands together.	Binfield and Halton together.	Husbands and Halton together.	Total at one or two of the Stations.	No Rain at any of the three Stations.
		All three Stations together.	Binfield.	Husbands, Halton.					
January .....	9.3	10.6	9.9	8.3	10.2	7.7	6.9	8.7	7.9
February .....	7.2	9.4	9.3	7.	8.1	9.9	7.1	8.2	7.8
March .....	3.7	9.2	10.5	10.1	8.1	8.5	5.9	8.8	15.
April .....	3.8	11.6	10.3	9.5	6.5	7.2	6.7	8.6	14.
May .....	6.1	9.7	10.6	10.3	6.8	6.8	5.	8.1	13.
June .....	9.8	8.4	9.5	8.4	7.1	8.2	13.	9.1	5.8
July .....	10.8	8.	7.9	9.7	9.6	7.2	11.9	9.	5.4
August .....	11.	7.7	8.2	7.9	7.1	8.1	10.1	8.3	4.5
September .....	9.	7.1	7.2	5.3	12.7	9.6	9.5	8.4	5.9
October .....	10.9	7.1	5.2	6.5	9.3	8.2	9.	7.5	5.9
November .....	9.6	6.2	5.2	7.5	7.7	8.9	8.4	7.5	6.5
December .....	8.8	5.	6.2	9.5	6.8	9.7	6.5	7.8	8.3
Total.....	100.	100.	100.	100.	100.	100.	100.	100.	100.