

The climate of Undercliff, Isle of Wight as deduced from forty years consecutive meteorological observations / by J L Whitehead.

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THE CLIMATE
OF THE
UNDERCLIFF, ISLE OF WIGHT

J.L. WHITEHEAD, M.D.

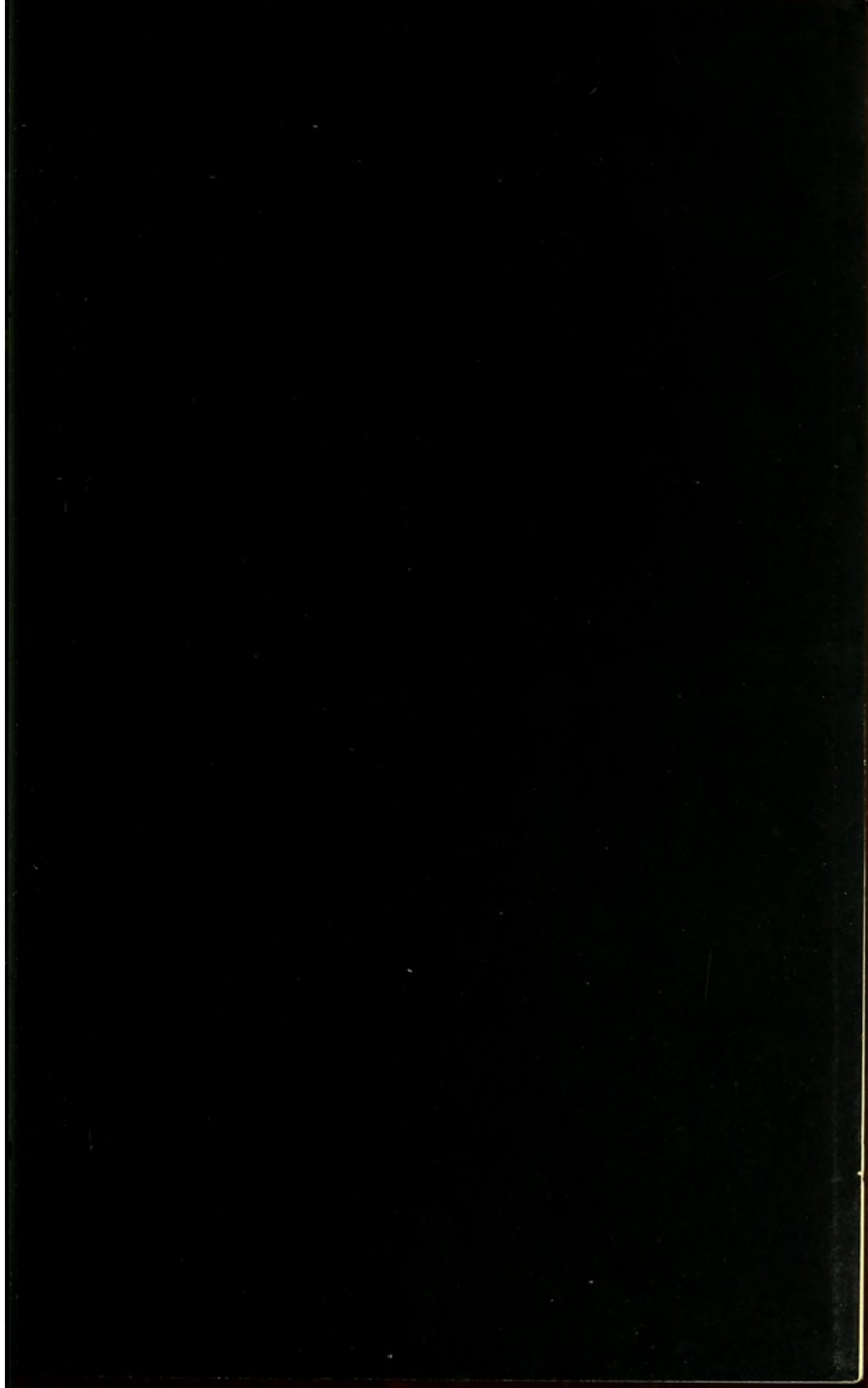
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THE UNDERCLIFF

ISLE OF WIGHT

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To Sir Andrew Clark. Bart.

A souvenir  
of East Down  
1891.

from A. E. S. H.

# THE CLIMATE

OF THE

## UNDERCLIFF, ISLE OF WIGHT

AS DEDUCED FROM FORTY YEARS' CONSECUTIVE  
METEOROLOGICAL OBSERVATIONS

BY

J. L. WHITEHEAD, M.D.



LONDON

J. & A. CHURCHILL, NEW BURLINGTON STREET

1881



THE CHAMBER

UNDERSTANDING THE

THE CHAMBER

THE CHAMBER

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THE CHAMBER

IN issuing the remaining copies of "The Climate of the Undercliff, Isle of Wight," I venture to add the following Extracts from a notice which appeared in "*Nature*," November 10th, 1881; as also a notice from the "*Edinburgh Medical Journal*." And as an extensive popular error has hitherto prevailed: that because the temperature of Ventnor and the Undercliff is comparatively warm during the winter months, so of necessity it is intensely hot during the summer months, I add the very valuable letter of Mr. Martin, published in the "*Times*" of the 20th August, 1884, which conclusively shows not only that such impression is without foundation, but that the very reverse is the fact. The Undercliff of the Isle of Wight, from the peculiarity of its position, being the coolest of all places of summer resort on the southern coast.

J. L. W.

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### "NATURE," NOVEMBER 10th, 1881.

#### OUR WINTER REFUGES. VENTNOR.

IT is now upwards of half a century since Sir James Clarke's Classical Work "On the Influence of Climate" in the prevention and cure of chronic disease appeared, and among the more important results which followed its publication, was the establishment of stations in this and other countries for Meteorological Observations, by which alone the climate of various sanatoria might be accurately compared. To Sir James is due, to a great extent, the merit of having placed the investigation of this important department of practical meteorology on a sound basis.

The late Dr. Martin of Ventnor, was one of the most intelligent and active of the Co-operative Band of Observers, whose services were enlisted in the enquiry. A Valuable Series of Observations was begun by him in the end of 1839, in establishing which Mr. Glaisher kindly gave his assistance and advice. The Observations have since been carried on uninterruptedly, and they are evidently, particularly those of temperature and rainfall, of such a quality as quite to meet the objects aimed at.



The results are presented and summarised in a just published volume by Dr. Whitehead with ability, in their bearings on the Climatology of Ventnor.

The Isle of Wight occupies a high place as a favourable and commodious residence throughout the year for a large class of invalids, owing to the variety which it presents in point of elevation, soil, and aspect, and to the configuration of its hills and shores, which give distinctive climatic peculiarities to certain districts, notably to the Undercliff. These peculiarities are of no inconsiderable value in the treatment of those diseases which require a mild, equable temperature, a comparatively small rainfall, and protection from certain noxious winds.

Dr. Whitehead's Book is carefully got up and printed, and the tables are introduced to the reader by a well-written and sensible preface.

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FROM THE EDINBURGH MEDICAL JOURNAL, NOVEMBER, 1881.

*The Climate of the Undercliff, Isle of Wight, as Deduced from Forty Years' Consecutive Meteorological Observations.* By J. L. WHITEHEAD, M.D. London : J. & A. Churchill : 1881.

THE reputation of the Undercliff as a health-resort—more particularly in consumption—is well established, and has been maintained for centuries, notwithstanding the formidable competition of numerous places both in this country and elsewhere. The explanation of this is furnished in this *brochure* by very elaborate and, we have no doubt, reliable statistical tables, kept during forty years—1840-79 inclusive—by the late Dr. Martin of Ventnor, and his brother. These tables exhibit an average temperature, mild during the winter, and cool during summer ; while the mean rainfall was 28·80 inches. The situation—about seven miles in length, and of an average breadth of a third of a mile—is very favourable as regards protection from cold winds, and by its sunny exposure, with pure sea air unmixed with any land breezes. The supply of water is both abundant and pure, and it is very satisfactory to know that the drainage was thoroughly examined last year by the local government inspector, Dr. Ballard, who caused all suspicious wells to be closed, and everything likely to interfere with the sanitary condition of the town and neighbourhood to be inquired into and removed.



## SUMMER TEMPERATURE OF VENTNOR AND THE UNDERCLIFF.

TO THE EDITOR OF "THE TIMES."

SIR,

The present year appears to have brought once more one of the old-fashioned summers which have been so lacking during the last decade.

It has been dry, with large amount of sunshine, while the temperature in certain localities has risen to a height most unusual, and in excess of that recorded for several years, and it is only necessary to refer to Kew meteorological report for the week ending the 13th inst. in corroboration of such statement. It says:—"Some exceptionally high temperatures have been chronicled throughout the period now under comment. The *maximum* in the shade on six days out of seven having exceeded 80 deg. Monday, the 11th, was the hottest day experienced for the present season, when the thermometer, with a northern aspect read 89 deg., while in a secondary screen in a more open position 91.5 deg. was attained: at Greenwich, a temperature of 94 deg. appears to have been recorded: at the Crystal Palace 97.5 deg.: at Hillington, Norfolk, 93 deg., in London, 92 deg.: and at York, 87 deg., all in the shade."

There can be no doubt, therefore, that the present year has proved a remarkable one, as showing the force of the sun's rays and high temperature arising therefrom, and, therefore, affords a fitting opportunity of dealing with some peculiarities incident to the Undercliff of the Isle of Wight, as regards temperature.

The marked characteristic is the equable nature of its climate: the mean of a series of unbroken observations, extending over a period of 40 years, giving the following results as the variation of temperature during the 24 hours, of winter, spring, summer, and autumn,—winter, 7.10 deg.: spring, 10.61 deg.: summer, 10.24 deg.: autumn, 8.30.

The comparative warmth of its winter has, however led to much popular prejudice as regards the summer, and people think that because it is comparatively warm in the winter, it must necessarily be intensely hot during the summer, very many shunning it for that reason as a place of resort. However, the reverse is actually the fact, and the same circumstances that tend to render it mild during the winter render it equally cool during the summer. Too much stress cannot be placed on the fact that the Undercliff of the Isle of Wight stands completely out at sea, at a distance of 14 miles from the mainland, the coast from Bonchurch on the east trending rapidly to the north, while it does the same from Blackgang, on the west, thus leaving the truncated extremity of the Island, of which the Undercliff consists (for a length of six miles) fairly



out in the Channel. It has, therefore, during the hottest months, the full influence of the sea breeze, which is ever more or less present, and tends to moderate the influence of the sun's rays : while from its position it has the advantage of being more or less in shade during a considerable portion of a summer day, the sun's rays failing to reach it during the earlier morn, in consequence of the high land at Dunnose, while soon after 6 p.m. it again falls into shade, as the sun declines behind the range of high cliffs which extend along its northern boundary. Thus the sun is not constantly dwelling upon it, when above the horizon. While, in addition to the foregoing circumstances, there is its insular position, and the influence exerted by the surrounding sea.

In proof of the foregoing statement and in contrast with the excessive readings which have been prevalent over the greater part of England, especially on the 11th instant, the following meteorological observations are appended of *maximum* and *minimum* temperature from the 8th to the 14th recorded at Ventnor, as also at St. Lawrence, not from hap-hazard readings, but at recognised stations, where the temperature has been regularly noted for some years.

| DATE.          | VENTNOR.     |              | ST. LAWRENCE. |              | KEW.         |              |
|----------------|--------------|--------------|---------------|--------------|--------------|--------------|
|                | Max.<br>Deg. | Min.<br>Deg. | Max.<br>Deg.  | Min.<br>Deg. | Max.<br>Deg. | Min.<br>Deg. |
| August 8.....  | 78           | 67           | 77.9          | 62.7         | 87           | 59           |
| August 9.....  | 75           | 68           | 80.6          | 63.0         | 85           | 61           |
| August 10..... | 78           | 66           | 76.1          | 64.1         | 81           | 60           |
| August 11..... | 78           | 66           | 80.1          | 61.9         | 89           | 61           |
| August 12..... | 70           | 64           | 68.9          | 61.4         | 81           | 63           |
| August 13..... | 70           | 62           | 71.3          | 59.6         | 76           | 61           |
| August 14..... | 70           | 58           | 69.5          | 56.0         |              |              |

The highest in sun with black-bulb thermometer (not in vacuo) was on the 11th, when it reached 107 deg., other readings varying from 103 deg. to 105 deg. To show the influence of the sea breeze, a thermometer exposed to the sun on the pier at Ventnor, 320ft. from the shore, on the 11th, did not exceed 86 deg., though there was but trifling breeze ; while on the 13th, with fresh breeze, it did not rise beyond 75 deg., the temperature of the sea varied from 65 deg. to 66 deg. taken with a verified Casella thermometer constructed for that purpose.

The rainfall up to the present date has only amounted to .05in., resulting from the outskirts of thunderstorms so prevalent on the 12th and 13th. The actual presence of thunderstorms at the back of the Island is the exception, as they are very unfrequent, and seldom last for any length of time.

J. B. MARTIN.

Ventnor, Aug. 18th, 1884.



## INTRODUCTORY REMARKS

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THE object of this paper is to offer some important statistics, as also a few observations with regard to the temperature and climate of the Undercliff of the Isle of Wight, and I am indebted for such statistics to the labour of the late Dr. Martin, of Ventnor, and his brother Mr. Martin, M.R.C.S.

The meteorological observations extend over an unbroken space of forty years—namely, from 1840 to 1879 inclusive. They were commenced by the late Dr. Martin soon after his arrival at Ventnor, and his attention was the more especially directed to such observations as he was at that time engaged on behalf of his friend the late Sir James Clark in calculating and arranging for him the tables which were subsequently published in his well-known work upon Climate. Dr. Martin procured the best instruments which were to be obtained at that period, and eventually, with the kind counsel of his friend Mr. Glaisher, formed an observatory for the arrangement of his instruments, which has subsequently stood the test of comparison with other observations made at the National Consumptive Hospital, between Ventnor and St. Lawrence, as likewise with those of the Rev. Clifford Malden at St. Lawrence, at both of which places the Stevenson stand and verified instruments are employed. The result of the separate observations being so closely in accord, serves to demonstrate the reliability of the observations made at Ventnor, carried over so long a period as that previously mentioned—namely, forty years.

The Undercliff of the Isle of Wight extends from Bonchurch to Blackgang, a distance of between six and seven miles, with an average breadth of a third of a mile. It has been formed by the subsidence of the land, at some remote period, from the uppercliff, which rises between 400 and 500 feet above the level of the sea and backs it, for the most part, as with a wall. In its descent the land has fallen into natural terraces, which face the sea and front nearly due south. The consequence of such an arrangement, with



its insular position, has doubtless a marked influence with regard to its climate, obtaining for it a mildness during the winter, as also coolness during the summer, which it otherwise would not possess, the slanting and terraced condition of the land enabling the sun's rays to fall more directly on the surface than they otherwise could do during the winter; while the shade of the upper cliffs affords protection from the dwelling rays of a summer's afternoon, and with the aid of the sea breeze shutting out the hot north summer winds renders the atmosphere comparatively cool and pleasant during the warmest periods of the year, the result being a mild climate during the winter and equally cool climate during the summer. In proof of the foregoing observations it is only necessary to point to the great equability of its temperature, as evidenced by the meteorological observations carried over the very long period before alluded to.

Sudden transitions from great heat to cold and extensive range of temperature may be said to be unknown. The mean daily range for the respective seasons of winter, spring, summer, and autumn are as follows:—

Winter,  $7^{\circ} \cdot 10$ ; spring,  $10^{\circ} \cdot 6$ ; summer,  $10^{\circ} \cdot 24$ ; autumn,  $8^{\circ} \cdot 80$ . With regard to the mildness of its winters, reference may be had to Table XX., where the mildest and coldest winters are tabulated. The winters of 1845-46, 48-49, 50-51, 65-66, 76-77 passed with little or no frost, the thermometer never having fallen lower than  $29^{\circ}$ , and then on very few occasions; while during the winters of 1862-63 and 68-69 no frost whatever was recorded, the thermometer never descending below  $33^{\circ}$ . The cold winters were those of 1840-41, 54-55, 69-70, 70-71, and 78-79 (some of which winters were extremely rigorous on the mainland, as also in France); the thermometer, however, did not fall below  $19^{\circ}$ , and then only during the winter of 69-70.

While considering the climate of the Undercliff reference may also be made to the difference of temperature and rainfall between Ventnor and Newport, the chief town in the island, placed near its centre. Mr. Aldridge, to whom this paper is indebted for the following observation, in a communication published by him in April 1872 says: 'With regard to the mean daily maximum temperature (or the average point at which the thermometer stands during the warmest part of the day), the two towns may be said to be fairly equal during the months of February and March, after which Newport has the superiority until October, when Ventnor takes the lead



and maintains it for the remainder of the twelve months. The Newport excess in the month of May (which seems to be a chilly month at Ventnor), June, and July averages about  $2^{\circ}75$ , and is more than half a degree on the mean of the whole year. As to the mean daily minimum (or the average point at which the thermometer stands during the colder part of the twenty-four hours), Ventnor has the superiority over Newport throughout the entire year, the excess being  $1^{\circ}75$ .

'With regard to the amount of rain, Ventnor has the drier climate of the two. Taking the whole year, therefore, the climate of Ventnor is rather warmer, much more equable, and considerably drier than that of Newport. The latter fact may probably be accounted for by Newport being placed to the leeward of the range of Down, stretching from the Needles to Brading, while Ventnor is to the windward of the range of hill in its more immediate vicinity.'

In a very recent paper Mr. Aldridge makes also the following observation: 'In illustration of the great superiority of Ventnor to Newport in times of severe nocturnal cold, it may be mentioned that in October 1873 the minimum temperature was  $37^{\circ}$  at Ventnor and  $28^{\circ}5$  at Newport. The rise of mean temperature in August and comparative warmth of the autumn and early winter are also noticeable points in the climate of the Undercliff.'

The temperature of the Undercliff during the spring months, April and May, does not increase in the same proportion as that of Greenwich, and vegetation is never early; but the continuance of warmth into the autumn months is equally marked—a fact which is thus noticed by Mr. Aldridge, who says: 'I find the same result (that is, the warmer autumn) revealed in the comparison with Newport. At Ventnor October is considerably warmer than May; but at Newport and Greenwich May is considerably warmer than October—a matter of importance to late visitors. Again, November at Newport is  $1^{\circ}$  warmer than March, but at Ventnor it is  $2^{\circ}5$ .'

The soil of the Undercliff is dry, being for the most part composed of chalk with the upper green sandstone intermingled at various points with the gault, but the whole mass is much disrupted and broken up. The result is that the surface soon dries after rain.

While, with a temperature closely assimilating, if not identical, with that of Torquay, Ventnor has the advantage of a much less humid atmosphere, and is consequently by no means so relaxing.



Taking the rainfall of forty years, it shows a mean of 28·80 inches. But it is somewhat remarkable, the gradual increase during the several decades from 1840 to 49 was 25·72 inches; 1850 to 59, 28·44 inches; 1860 to 69, 29·161 inches; 1870 to 79, 31·109 inches. The rainfall of 1875, 76, 77, 78, 79 was greatly in excess of that usually recorded in previous years, and it is believed the same result was obtained in several other localities, and that such excessive rainfall was a very material cause in producing the evil which tended so much to embarrass and distress the agricultural interests. From the nature of the soil, before pointed out, the streets and roads soon become dry after rain, and it is a rare circumstance that the weather should be so continuously bad as totally to prevent outdoor exercise during some part of the day. There is also another noticeable feature, which is as true now as it was at the period when Dr. Martin alluded to the fact in his work on the Undercliff—‘that more rain seems to fall during the night than in the day.’ The circumstance is frequently matter of common observation, and has its advantage in affording for the most part greater facilities for outdoor exercise.

The Undercliff is full of springs of the purest water, and the water supply afforded to the town of Ventnor and its immediate neighbourhood by the water company has every advantage of not only a very pure but superabundant source. Formerly the town was supplied from a reservoir under the hill at Grove Road (which reservoir is still in existence, though unused except during seasons of great drought). At present it finds its source from a most powerful spring struck on the north side of the Down in driving a shaft in order to construct the railway tunnel. It was so abundant as to give great trouble to the engineers at the time, and it was subsequently utilised by being brought by the water company through the tunnel to a large reservoir they possess close by the station. The supply from so deep a spring is remarkable for its purity as well as abundance; and, being delivered at so high a level, the town, as far as Ventnor itself is concerned, is supplied without the necessity of lifting power. For the wants of Bonchurch and the upper levels it is raised to a large reservoir on the side of the Down and then distributed as required.

The prevailing winds are westerly, and, taking the period of forty years, the northerly and easterly winds as compared with southerly and westerly are 5,934 to 8,584.

In considering the climate of the Undercliff it is necessary to



bear in mind that we are still dealing with that which pertains to all places of health resort in the United Kingdom—namely, a British climate, subject to all the changes and vicissitudes of weather to which it is so liable. The changes, however, are felt relatively less at the Undercliff than probably elsewhere, and the weather for the most part, if bad on the mainland, seldom visits the back of the island save in a modified form. Snow during the forty years was the marked exception, not the rule; and during the hardest winters not only the thermometer, but also the perfect preservation of the shrubs and evergreens, bore testimony to the comparative mildness of the atmosphere. Of course it is not pretended, favoured though it would appear to be, that it can vie with the softer and sunnier clime of the South of Europe; though the instances are by no means few in which patients who have been from circumstances debarred from returning to the South have done even better at the Undercliff, amidst the comforts of home, an equable temperature, and more bracing atmosphere, than they did abroad.

It is not to be presumed that the Undercliff escaped from the remarkable seasons experienced during the last two years. With regard to 1879 it may truly be said, as elsewhere, there was no summer. The winter of 1879–80, so marked by the severity of its frost both in England and on the Continent, proved, however, an unusually fine winter. The mean temperature compared with other years was low, but the weather was bright and fine, the sky for the most part cloudless with bright sun. The minima during the months of December, January, and February were  $23^{\circ}$ ,  $23^{\circ}5$ ,  $32^{\circ}5$ , while in England and on the Continent the temperature in many places fell below zero. There was also no day on which the temperature did not rise during the four-and-twenty hours above freezing point.

The winter, however, of 1880–81 proved no exception to the widespread severity of the season. The weather had been fine and open until January 12, the minimum temperature up to that period not having fallen below  $28^{\circ}1$ , but on the 13th the temperature fell to  $24^{\circ}$  and frost set in. On the 16th the Undercliff participated to its full extent in the fearful snowstorm which spread over the whole of the country, the frost becoming more severe, the thermometer of the 22nd falling to  $15^{\circ}$  (the respective records being Ventnor,  $17^{\circ}$ ; Consumptive Hospital,  $15^{\circ}$ ; St. Lawrence,  $15^{\circ}5$ ), the lowest temperature ever recorded. But even under such circumstances it would seem to have had some advantages, which are best shown by comparison with the observations recorded by the Messrs.



Primarisi at Bournemouth, where a Stevenson's stand and verified instruments would appear to be used, the thermometer falling there on the 22nd to  $10^{\circ}$ , while the mean temperature for January and February was  $31^{\circ} \cdot 19$  and  $38^{\circ} \cdot 25$ , as compared with  $30^{\circ} \cdot 31$  and  $40^{\circ} \cdot 15$  at the Undercliff.

It may probably not be out of order, while dealing with the Undercliff as a place of health resort, to notice the sanitary condition of the town of Ventnor. It is under the Health of Towns Act; but unfortunately local authorities frequently fail—in the first place probably from not clearly understanding the scope and powers of such Act; and in the second place from a false economy, to see the necessity of carrying out many of its most important provisions, and in that respect the local board of Ventnor proved no exception. Under the advent of Dr. Ballard, the local Government inspector, in the spring of 1880, however, their shortcomings were so clearly placed before them that immediate steps were taken to remedy the ills complained of. The main drainage was thoroughly examined, defects permanently remedied, and where necessary a new sewer laid down; a house-to-house inspection by the medical officer and inspector of nuisances was carried out, and a record kept of each house, compulsory action being taken to compel as far as possible proper communication with the main sewers. Certificates as to the satisfactory condition of each house were offered by the board on the payment of a small fee. The water supply as obtained from the company was also entered into, proper connections made, and a constant instead of an intermittent supply insisted on. Existing wells were likewise also examined, and the water obtained from them forwarded for analysis to the public analyst, and where suspicious the wells were closed. The result of the action so taken was soon evident from the absence of those evils usually attributed to the influence of sewer gas, and the town, as far as sanitary arrangements are concerned, may be safely said to be placed on a most satisfactory footing; and, with the experience of the past, it is to be hoped that the recent active supervision, which has been attended with such marked results, may be continued in the interests of the town.

The object, however, is that the subjoined tables should speak for themselves, as showing the value of the Undercliff of the Isle of Wight as a place of health resort, and the apology for producing them in the present form is the very long period over which they extend.

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Since the foregoing observations were sent to the press I have received a copy of a paper upon Ventnor as a place of health resort, published in the New York 'Medical Journal' for May 1881, by Dr. W. Thornton Parker, of Plymouth, Massachusetts, in which the following remarks are to be found. After quoting the opinion of Dr. Simons 'that the pure air of the *open sea* acts in a very favourable manner we have excellent authority, *but it is not so clear* that the air on sea-shores is, as a rule, sanitary in its effects,' he goes on to say: 'Now, in the midst of all the conflicting testimony I find that the majority seem to regard the "pure air of the *open sea*" beneficial; it is the *mixture* of land and sea air which is feared. The climate at almost all seaside resorts is certainly affected more or less by the mixture of land and sea air; but at Ventnor the air is almost, if not wholly, the "pure air of the sea." No land breezes can be felt; no streams or ponds of fresh water exist of any considerable size. The geographical situation, far out in ocean, the southern exposure, and the tremendous "Downs" have given to Ventnor a climate which cannot be found elsewhere, and which I believe, considering the accessories, is unsurpassed in the world for the treatment of pulmonary diseases.'

The foregoing observations with regard to 'the pure air of the open sea' has not unfrequently been noticed by many who have visited the back of the island; and the fact is borne out by the general formation of the Isle of Wight, the shape of which has been compared to that of a lozenge, the southern apex of which consists of the 'Undercliff;' the land trending to the north from 'Bonchurch,' at its eastern extremity, to the Culver Cliffs; while at its western extremity, 'Blackgang,' it equally falls back to the north, until the 'Needles' and 'Freshwater' are reached, leaving the whole of the Undercliff as it were jutting out into the sea; and that at a distance, inclusive of the Solent, of some 18 or 20 miles from the mainland, a conformation which does not exist in any other locality, and consequently is worthy of especial note.

JOHN L. WHITEHEAD.

Belgrave House, Ventnor:

August 1881.



TABLE I.—WINTER MONTHS.

*Lat. 50° 35' 33". Long. 1° 4' 49". Ht. of Instruments above Sea Level, High-water Spring Tides, 150 ft.*

|         |            | Max. | Min. | Mean  | Rainfall in inches | No. of days on which 'or fell | Mean Temperature of Winter Months | Mean Rainfall of Winter Months |
|---------|------------|------|------|-------|--------------------|-------------------------------|-----------------------------------|--------------------------------|
| 1839-40 | December . | 53   | 31   | 43.46 | 4.43               | 16                            | 42.97                             | 2.79                           |
|         | January .  | 54   | 28   | 43.80 | 2.88               | 17                            |                                   |                                |
|         | February . | 54   | 30   | 41.66 | 1.08               | 14                            |                                   |                                |
| 1840-41 | December . | 54   | 21   | 36.00 | .74                | 6                             | 36.90                             | 1.77                           |
|         | January .  | 50   | 25   | 38.06 | 2.88               | 14                            |                                   |                                |
|         | February . | 54   | 20   | 36.65 | 1.71               | 13                            |                                   |                                |
| 1841-42 | December . | 56   | 29   | 43.75 | 2.64               | 18                            | 41.27                             | 1.56                           |
|         | January .  | 48   | 27   | 36.98 | .58                | 9                             |                                   |                                |
|         | February . | 53   | 32   | 43.08 | 1.47               | 13                            |                                   |                                |
| 1842-43 | December . | 58   | 35   | 47.48 | .87                | 10                            | 42.99                             | 1.83                           |
|         | January .  | 53   | 31   | 42.78 | 2.03               | 17                            |                                   |                                |
|         | February . | 51   | 24   | 38.72 | 2.61               | 14                            |                                   |                                |
| 1843-44 | December . | 55   | 37   | 47.95 | 1.05               | 9                             | 43.71                             | 2.08                           |
|         | January .  | 53   | 30   | 43.19 | 2.30               | 14                            |                                   |                                |
|         | February . | 51   | 28   | 39.99 | 2.91               | 21                            |                                   |                                |
| 1844-45 | December . | 51   | 25   | 37.78 | .27                | 7                             | 39.31                             | 1.21                           |
|         | January .  | 51   | 27   | 42.14 | 2.12               | 15                            |                                   |                                |
|         | February . | 52   | 26   | 38.03 | 1.26               | 11                            |                                   |                                |
| 1845-46 | December . | 54   | 31   | 45.04 | 3.54               | 21                            | 45.86                             | 2.70                           |
|         | January .  | 54   | 34   | 46.49 | 3.44               | 22                            |                                   |                                |
|         | February . | 55   | 29   | 46.07 | 1.15               | 15                            |                                   |                                |
| 1846-47 | December . | 50   | 25   | 37.35 | 1.85               | 11                            | 39.51                             | 1.85                           |
|         | January .  | 52   | 29   | 41.38 | 2.15               | 16                            |                                   |                                |
|         | February . | 52   | 24   | 39.82 | 1.56               | 13                            |                                   |                                |
| 1847-48 | December . | 55   | 30   | 45.12 | 3.05               | 17                            | 42.77                             | 3.46                           |
|         | January .  | 52   | 22   | 38.19 | 2.38               | 16                            |                                   |                                |
|         | February . | 52   | 31   | 44.92 | 4.97               | 23                            |                                   |                                |
| 1848-49 | December . | 59   | 31   | 46.49 | 3.99               | 18                            | 45.33                             | 3.20                           |
|         | January .  | 52   | 29   | 43.53 | 2.91               | 18                            |                                   |                                |
|         | February . | 54   | 35   | 45.95 | 2.72               | 14                            |                                   |                                |

TABLE II.—WINTER MONTHS.

*Lat. 50° 35' 33". Long. 1° 4' 49". Ht. of Instruments above Sea Level, High-water Spring Tides, 150 ft.*

|         |            | Max. | Min. | Mean  | Rainfall in inches | No. of days on which or fell | Mean Temperature of Winter Months | Mean Rainfall of Winter Months |
|---------|------------|------|------|-------|--------------------|------------------------------|-----------------------------------|--------------------------------|
| 1849-50 | December . | 54   | 26   | 42'41 | 3'62               | 15                           | 42'00                             | 2'23                           |
|         | January .  | 52   | 26   | 37'67 | 1'62               | 14                           |                                   |                                |
|         | February . | 56   | 36   | 45'94 | 1'45               | 13                           |                                   |                                |
| 1850-51 | December . | 56   | 33   | 45'30 | 2'28               | 14                           | 45'41                             | 2'29                           |
|         | January .  | 52   | 40   | 46'74 | 3'31               | 24                           |                                   |                                |
|         | February . | 52   | 32   | 44'19 | 1'28               | 8                            |                                   |                                |
| 1851-52 | December . | 55   | 32   | 44'04 | '74                | 9                            | 44'42                             | 1'75                           |
|         | January .  | 54   | 32   | 45'68 | 3'72               | 22                           |                                   |                                |
|         | February . | 58   | 29   | 43'55 | '80                | 12                           |                                   |                                |
| 1852-53 | December . | 56   | 34   | 50'38 | 3'80               | 22                           | 44'24                             | 2'98                           |
|         | January .  | 55   | 34   | 45'62 | 3'67               | 21                           |                                   |                                |
|         | February . | 50   | 25   | 36'73 | 1'47               | 13                           |                                   |                                |
| 1853-54 | December . | 54   | 24   | 38'78 | '58                | 9                            | 41'28                             | 1'54                           |
|         | January .  | 50   | 28   | 42'07 | 3'24               | 19                           |                                   |                                |
|         | February . | 54   | 30   | 43'01 | '80                | 12                           |                                   |                                |
| 1854-55 | December . | 54   | 32   | 44'86 | 1'49               | 15                           | 39'08                             | 1'48                           |
|         | January .  | 53   | 25   | 38'67 | '32                | 9                            |                                   |                                |
|         | February . | 49   | 21   | 33'73 | 2'63               | 15                           |                                   |                                |
| 1855-56 | December . | 51   | 21   | 40'37 | 1'35               | 11                           | 42'28                             | 1'79                           |
|         | January .  | 52   | 29   | 42'56 | 2'92               | 18                           |                                   |                                |
|         | February . | 54   | 30   | 43'91 | 1'11               | 11                           |                                   |                                |
| 1856-57 | December . | 56   | 26   | 43'90 | 3'07               | 14                           | 42'32                             | 1'87                           |
|         | January .  | 53   | 25   | 39'99 | 2'27               | 16                           |                                   |                                |
|         | February . | 55   | 29   | 43'08 | '29                | 7                            |                                   |                                |
| 1857-58 | December . | 57   | 40   | 49'23 | '94                | 13                           | 44'19                             | 1'30                           |
|         | January .  | 53   | 26   | 42'78 | 1'53               | 11                           |                                   |                                |
|         | February . | 53   | 29   | 40'56 | 1'43               | 9                            |                                   |                                |
| 1858-59 | December . | 54   | 36   | 44'56 | 3'59               | 20                           | 44'62                             | 2'57                           |
|         | January .  | 52   | 31   | 43'54 | 1'95               | 17                           |                                   |                                |
|         | February . | 55   | 34   | 45'76 | 1'61               | 12                           |                                   |                                |



TABLE III.—WINTER MONTHS.

*Lat. 50° 35' 33". Long. 1° 4' 49". Ht. of Instruments above Sea Level, High-water Spring Tides, 150 ft.*

|         |            | Max. | Min. | Mean  | Rainfall in<br>inches | No. of days<br>on which<br>'or fell | Mean Tem-<br>perature of<br>Winter<br>Months | Mean<br>Rainfall of<br>Winter<br>Months |
|---------|------------|------|------|-------|-----------------------|-------------------------------------|----------------------------------------------|-----------------------------------------|
| 1859-60 | December . | 54   | 23   | 40·85 | 4·18                  | 16                                  | 41·14                                        | 2·91                                    |
|         | January .  | 53   | 30   | 43·77 | 3·66                  | 15                                  |                                              |                                         |
|         | February . | 51   | 26   | 38·80 | ·90                   | 8                                   |                                              |                                         |
| 1860-61 | December . | 53   | 22   | 40·09 | 3·65                  | 15                                  | 40·83                                        | 2·01                                    |
|         | January .  | 52   | 24   | 38·40 | ·38                   | 7                                   |                                              |                                         |
|         | February . | 51   | 27   | 44·01 | 2·01                  | 14                                  |                                              |                                         |
| 1861-62 | December . | 56   | 30   | 44·62 | 1·36                  | 8                                   | 43·00                                        | 1·41                                    |
|         | January .  | 51   | 30   | 41·90 | 2·26                  | 17                                  |                                              |                                         |
|         | February . | 53   | 25   | 42·48 | ·62                   | 7                                   |                                              |                                         |
| 1862-63 | December . | 54   | 33   | 46·14 | 3·32                  | 18                                  | 45·09                                        | 2·79                                    |
|         | January .  | 52   | 34   | 43·83 | 4·19                  | 19                                  |                                              |                                         |
|         | February . | 53   | 35   | 45·32 | ·88                   | 8                                   |                                              |                                         |
| 1863-64 | December . | 55   | 30   | 46·80 | 3·07                  | 13                                  | 42·31                                        | 2·13                                    |
|         | January .  | 52   | 25   | 41·17 | 1·79                  | 15                                  |                                              |                                         |
|         | February . | 52   | 25   | 38·97 | 1·55                  | 9                                   |                                              |                                         |
| 1864-65 | December . | 54   | 28   | 41·57 | 1·15                  | 10                                  | 40·28                                        | 3·12                                    |
|         | January .  | 50   | 27   | 39·90 | 5·74                  | 22                                  |                                              |                                         |
|         | February . | 52   | 25   | 39·37 | 2·48                  | 17                                  |                                              |                                         |
| 1865-66 | December . | 54   | 33   | 45·85 | 2·51                  | 14                                  | 45·34                                        | 3·75                                    |
|         | January .  | 54   | 30   | 45·98 | 4·56                  | 22                                  |                                              |                                         |
|         | February . | 54   | 32   | 44·22 | 4·18                  | 18                                  |                                              |                                         |
| 1866-67 | December . | 56   | 34   | 47·23 | 2·69                  | 19                                  | 44·02                                        | 2·76                                    |
|         | January .  | 54   | 20   | 37·74 | 2·80                  | 10                                  |                                              |                                         |
|         | February . | 55   | 39   | 47·10 | 2·80                  | 14                                  |                                              |                                         |
| 1867-68 | December . | 55   | 27   | 40·38 | 1·10                  | 7                                   | 41·52                                        | 1·80                                    |
|         | January .  | 50   | 26   | 39·25 | 3·68                  | 19                                  |                                              |                                         |
|         | February . | 56   | 32   | 44·95 | ·62                   | 7                                   |                                              |                                         |
| 1868-69 | December . | 55   | 37   | 48·56 | 6·15                  | 25                                  | 47·13                                        | 3·69                                    |
|         | January .  | 53   | 33   | 45·30 | 2·72                  | 15                                  |                                              |                                         |
|         | February . | 55   | 34   | 47·53 | 2·20                  | 14                                  |                                              |                                         |

TABLE IV.—WINTER MONTHS.

*Lat. 50° 35' 33". Long. 1° 4' 49". Ht. of Instruments above Sea Level, High-water Spring Tides, 150 ft.*

|         |            | Max. | Min. | Mean  | Rainfall in<br>inches | No. of days<br>on which<br>'or fell | Mean Tem-<br>perature of<br>Winter<br>Months | Mean<br>Rainfall of<br>Winter<br>Months |
|---------|------------|------|------|-------|-----------------------|-------------------------------------|----------------------------------------------|-----------------------------------------|
| 1869-70 | December . | 52   | 22   | 39'90 | 3'23                  | 16                                  | 39'61                                        | 2'14                                    |
|         | January .  | 51   | 31   | 41'33 | 1'44                  | 9                                   |                                              |                                         |
|         | February . | 49   | 24   | 37'61 | 1'77                  | 9                                   |                                              |                                         |
| 1870-71 | December . | 53   | 19   | 35'64 | 2'72                  | 10                                  | 38'46                                        | 2'44                                    |
|         | January .  | 46   | 23   | 36'30 | 3'27                  | 19                                  |                                              |                                         |
|         | February . | 51   | 27   | 43'44 | 1'33                  | 15                                  |                                              |                                         |
| 1871-72 | December . | 51   | 26   | 41'25 | ·86                   | 10                                  | 44'05                                        | 2'71                                    |
|         | January .  | 51   | 36   | 43'96 | 5'43                  | 21                                  |                                              |                                         |
|         | February . | 53   | 38   | 46'94 | 1'85                  | 18                                  |                                              |                                         |
| 1872-73 | December . | 54   | 32   | 45'80 | 5'73                  | 21                                  | 42'61                                        | 4'21                                    |
|         | January .  | 54   | 33   | 44'82 | 3'90                  | 22                                  |                                              |                                         |
|         | February . | 48   | 30   | 37'21 | 3'01                  | 11                                  |                                              |                                         |
| 1873-74 | December . | 55   | 32   | 45'43 | ·96                   | 11                                  | 44'53                                        | 1'49                                    |
|         | January .  | 55   | 35   | 45'15 | 2'23                  | 17                                  |                                              |                                         |
|         | February . | 52   | 29   | 43'03 | 1'30                  | 12                                  |                                              |                                         |
| 1874-75 | December . | 53   | 27   | 37'74 | 2'54                  | 15                                  | 40'72                                        | 4'71                                    |
|         | January .  | 52   | 33   | 45'86 | 5'61                  | 23                                  |                                              |                                         |
|         | February . | 51   | 28   | 38'58 | 2'98                  | 12                                  |                                              |                                         |
| 1875-76 | December . | 52   | 25   | 40'62 | ·86                   | 14                                  | 40'88                                        | 1'70                                    |
|         | January .  | 54   | 27   | 39'93 | ·68                   | 10                                  |                                              |                                         |
|         | February . | 52   | 36   | 43'11 | 3'56                  | 21                                  |                                              |                                         |
| 1876-77 | December . | 57   | 32   | 47'01 | 7'67                  | 21                                  | 46'38                                        | 5'52                                    |
|         | January .  | 54   | 34   | 46'17 | 6'83                  | 26                                  |                                              |                                         |
|         | February . | 54   | 29   | 45'96 | 2'06                  | 19                                  |                                              |                                         |
| 1877-78 | December . | 56   | 33   | 44'98 | 2'25                  | 15                                  | 43'93                                        | 2'16                                    |
|         | January .  | 54   | 30   | 42'78 | 2'08                  | 16                                  |                                              |                                         |
|         | February . | 54   | 32   | 44'03 | 2'16                  | 14                                  |                                              |                                         |
| 1878-79 | December . | 51   | 24   | 37'40 | 2'10                  | 17                                  | 37'67                                        | 3'47                                    |
|         | January .  | 49   | 23   | 35'41 | 4'41                  | 14                                  |                                              |                                         |
|         | February . | 50   | 27   | 40'21 | 3'92                  | 23                                  |                                              |                                         |



TABLE V.—SPRING MONTHS.

*Lat. 50° 35' 33". Long. 1° 4' 49". Ht. of Instruments above Sea Level, High-water Spring Tides, 150 't.*

|      |           | Max. | Min. | Mean  | Rainfall in inches | No. of days on which 'or fell | Mean Temperature of Spring Months | Mean Rainfall of Spring Months |
|------|-----------|------|------|-------|--------------------|-------------------------------|-----------------------------------|--------------------------------|
| 1840 | March. .  | 61   | 29   | 42'30 | '03                | 3                             | 49'96                             | '45                            |
|      | April . . | 75   | 34   | 52'93 | 0                  | 0                             |                                   |                                |
|      | May . .   | 73   | 38   | 54'67 | 1'34               | 5                             |                                   |                                |
| 1841 | March. .  | 63   | 34   | 46'83 | '88                | 11                            | 50'79                             | 1'18                           |
|      | April . . | 73   | 34   | 49'16 | '85                | 10                            |                                   |                                |
|      | May . .   | 77   | 46   | 56'40 | 1'82               | 11                            |                                   |                                |
| 1842 | March. .  | 55   | 32   | 45'37 | 1'34               | 20                            | 49'71                             | '72                            |
|      | April . . | 72   | 33   | 49'78 | '03                | 2                             |                                   |                                |
|      | May . .   | 74   | 42   | 53'98 | '81                | 12                            |                                   |                                |
| 1843 | March. .  | 64   | 30   | 46'41 | 1'19               | 10                            | 49'70                             | 2'58                           |
|      | April . . | 69   | 31   | 49'56 | 1'94               | 18                            |                                   |                                |
|      | May . .   | 68   | 41   | 53'15 | 4'63               | 21                            |                                   |                                |
| 1844 | March. .  | 61   | 29   | 44'64 | 3'29               | 16                            | 51'03                             | 1'24                           |
|      | April . . | 69   | 38   | 53'33 | '13                | 5                             |                                   |                                |
|      | May . .   | 72   | 36   | 55'12 | '32                | 7                             |                                   |                                |
| 1845 | March. .  | 57   | 20   | 39'38 | '82                | 10                            | 47'01                             | 1'02                           |
|      | April . . | 68   | 38   | 49'79 | '90                | 12                            |                                   |                                |
|      | May . .   | 68   | 39   | 52'06 | 1'36               | 20                            |                                   |                                |
| 1846 | March. .  | 57   | 31   | 47'09 | 3'38               | 20                            | 51'17                             | 2'21                           |
|      | April . . | 61   | 36   | 49'56 | 2'21               | 20                            |                                   |                                |
|      | May . .   | 70   | 43   | 56'88 | 1'05               | 10                            |                                   |                                |
| 1847 | March. .  | 60   | 26   | 44'65 | 1'72               | 11                            | 49'16                             | 1'74                           |
|      | April . . | 59   | 32   | 47'41 | 1'94               | 15                            |                                   |                                |
|      | May . .   | 73   | 39   | 55'43 | 1'57               | 16                            |                                   |                                |
| 1848 | March. .  | 65   | 35   | 46'14 | 3'13               | 22                            | 52'27                             | 2'39                           |
|      | April . . | 71   | 34   | 50'61 | 3'49               | 18                            |                                   |                                |
|      | May . .   | 74   | 46   | 59'98 | '55                | 4                             |                                   |                                |
| 1849 | March. .  | 61   | 30   | 45'25 | '88                | 11                            | 49'10                             | 2'15                           |
|      | April . . | 60   | 30   | 46'64 | 2'74               | 20                            |                                   |                                |
|      | May . .   | 73   | 40   | 55'43 | 2'84               | 11                            |                                   |                                |

TABLE VI.—SPRING MONTHS.

*Lat. 50° 35' 33". Long. 1° 4' 49". Ht. of Instruments above Sea Level, High-water Spring Tides, 150 ft.*

|      |         | Max. | Min. | Mean  | Rainfall in<br>inches | No. of days<br>on which<br>'01 fell | Mean Tem-<br>perature of<br>Spring<br>Months | Mean<br>Rainfall of<br>Spring<br>Months |
|------|---------|------|------|-------|-----------------------|-------------------------------------|----------------------------------------------|-----------------------------------------|
| 1850 | March.  | 57   | 28   | 42.75 | 1.15                  | 5                                   | 48.92                                        | 2.31                                    |
|      | April . | 61   | 40   | 50.49 | 3.15                  | 18                                  |                                              |                                         |
|      | May .   | 73   | 38   | 53.02 | 2.63                  | 12                                  |                                              |                                         |
| 1851 | March.  | 56   | 33   | 46.17 | 4.12                  | 21                                  | 48.93                                        | 2.32                                    |
|      | April . | 58   | 34   | 47.88 | 1.79                  | 13                                  |                                              |                                         |
|      | May .   | 68   | 36   | 52.76 | 1.06                  | 13                                  |                                              |                                         |
| 1852 | March.  | 64   | 31   | 44.69 | .50                   | 2                                   | 48.62                                        | 1.27                                    |
|      | April . | 63   | 35   | 48.26 | .84                   | 5                                   |                                              |                                         |
|      | May .   | 64   | 36   | 52.93 | 2.47                  | 15                                  |                                              |                                         |
| 1853 | March.  | 55   | 27   | 41.73 | 2.71                  | 14                                  | 48.11                                        | 2.37                                    |
|      | April . | 59   | 34   | 48.36 | 2.70                  | 18                                  |                                              |                                         |
|      | May .   | 72   | 35   | 54.24 | 1.70                  | 11                                  |                                              |                                         |
| 1854 | March.  | 59   | 34   | 46.09 | .38                   | 9                                   | 49.86                                        | 1.07                                    |
|      | April . | 62   | 33   | 51.23 | .09                   | 3                                   |                                              |                                         |
|      | May .   | 63   | 40   | 52.27 | 2.74                  | 21                                  |                                              |                                         |
| 1855 | March.  | 53   | 30   | 41.06 | 1.79                  | 13                                  | 46.14                                        | 1.64                                    |
|      | April . | 65   | 30   | 47.61 | .44                   | 7                                   |                                              |                                         |
|      | May .   | 70   | 34   | 49.75 | 2.71                  | 18                                  |                                              |                                         |
| 1856 | March.  | 53   | 33   | 43.09 | 1.13                  | 3                                   | 47.60                                        | 2.73                                    |
|      | April . | 61   | 38   | 48.68 | 3.72                  | 15                                  |                                              |                                         |
|      | May .   | 66   | 35   | 51.04 | 3.35                  | 18                                  |                                              |                                         |
| 1857 | March.  | 56   | 30   | 44.74 | 2.12                  | 15                                  | 48.90                                        | 1.64                                    |
|      | April . | 61   | 34   | 47.78 | 1.97                  | 16                                  |                                              |                                         |
|      | May .   | 70   | 37   | 54.19 | .85                   | 8                                   |                                              |                                         |
| 1858 | March.  | 64   | 27   | 44.14 | 1.34                  | 9                                   | 48.88                                        | 1.93                                    |
|      | April . | 66   | 32   | 49.78 | 2.92                  | 12                                  |                                              |                                         |
|      | May .   | 71   | 39   | 52.74 | 1.55                  | 11                                  |                                              |                                         |
| 1859 | March.  | 59   | 33   | 47.72 | 1.56                  | 10                                  | 50.07                                        | 2.07                                    |
|      | April . | 68   | 32   | 48.58 | 2.67                  | 15                                  |                                              |                                         |
|      | May .   | 68   | 39   | 53.91 | 1.98                  | 10                                  |                                              |                                         |



TABLE VII.—SPRING MONTHS.

*Lat. 50° 35' 33". Long. 1° 4' 49". Ht. of Instruments above Sea Level, High-water Spring Tides, 150 ft.*

|      |           | Max. | Min. | Mean  | Rainfall in inches | No. of days on which 'or fell | Mean Temperature of Spring Months | Mean Rainfall of Spring Months |
|------|-----------|------|------|-------|--------------------|-------------------------------|-----------------------------------|--------------------------------|
| 1860 | March. .  | 54   | 28   | 43'57 | 3'08               | 18                            | 47'65                             | 2'85                           |
|      | April . . | 61   | 34   | 45'26 | 1'94               | 13                            |                                   |                                |
|      | May . .   | 66   | 42   | 54'14 | 3'54               | 16                            |                                   |                                |
| 1861 | March. .  | 59   | 36   | 46'28 | 2'51               | 20                            | 49'62                             | 1'67                           |
|      | April . . | 62   | 36   | 48'61 | '45                | 5                             |                                   |                                |
|      | May . .   | 70   | 36   | 53'97 | 2'05               | 10                            |                                   |                                |
| 1862 | March. .  | 58   | 28   | 45'06 | 4'41               | 18                            | 50'01                             | 3'02                           |
|      | April . . | 65   | 32   | 49'51 | 1'65               | 12                            |                                   |                                |
|      | May . .   | 66   | 44   | 55'46 | 3'01               | 14                            |                                   |                                |
| 1863 | March. .  | 59   | 34   | 45'99 | 1'05               | 7                             | 49'96                             | 1'15                           |
|      | April . . | 63   | 37   | 50'68 | '62                | 8                             |                                   |                                |
|      | May . .   | 68   | 37   | 53'22 | 1'79               | 8                             |                                   |                                |
| 1864 | March. .  | 54   | 32   | 45'22 | 4'26               | 16                            | 50'39                             | 2'30                           |
|      | April . . | 62   | 39   | 49'65 | 1'34               | 7                             |                                   |                                |
|      | May . .   | 74   | 43   | 56'32 | 1'31               | 10                            |                                   |                                |
| 1865 | March. .  | 52   | 27   | 39'75 | 1'29               | 12                            | 49'81                             | 1'24                           |
|      | April . . | 74   | 40   | 54'36 | '59                | 7                             |                                   |                                |
|      | May . .   | 67   | 42   | 55'33 | 1'86               | 17                            |                                   |                                |
| 1866 | March. .  | 59   | 30   | 42'99 | 2'24               | 14                            | 48'69                             | 1'76                           |
|      | April . . | 65   | 40   | 50'55 | 2'17               | 14                            |                                   |                                |
|      | May . .   | 66   | 38   | 52'53 | '89                | 9                             |                                   |                                |
| 1867 | March. .  | 53   | 31   | 41'09 | 3'50               | 13                            | 49'15                             | 2'41                           |
|      | April . . | 60   | 39   | 50'62 | 1'82               | 17                            |                                   |                                |
|      | May . .   | 74   | 35   | 55'76 | 1'91               | 10                            |                                   |                                |
| 1868 | March. .  | 59   | 32   | 45'73 | '79                | 10                            | 50'74                             | 1'50                           |
|      | April . . | 66   | 34   | 50'15 | 2'69               | 11                            |                                   |                                |
|      | May . .   | 72   | 44   | 56'36 | 1'04               | 8                             |                                   |                                |
| 1869 | March. .  | 53   | 31   | 40'49 | 3'16               | 12                            | 47'69                             | 2'77                           |
|      | April . . | 68   | 35   | 50'61 | 1'12               | 8                             |                                   |                                |
|      | May . .   | 60   | 40   | 51'65 | 4'03               | 14                            |                                   |                                |

TABLE VIII.—SPRING MONTHS.

*Lat. 50° 35' 33". Long. 1° 4' 49". Ht. of Instruments above Sea Level, High-water Spring Tides, 150 ft.*

|      |         | Max. | Min. | Mean  | Rainfall in<br>inches | No. of days<br>on which<br>it fell | Mean Tem-<br>perature of<br>Spring<br>Months | Mean<br>Rainfall of<br>Spring<br>Months |
|------|---------|------|------|-------|-----------------------|------------------------------------|----------------------------------------------|-----------------------------------------|
| 1870 | March.  | 54   | 30   | 41'36 | 1'45                  | 8                                  | 47'29                                        | '90                                     |
|      | April . | 64   | 35   | 48'81 | '30                   | 3                                  |                                              |                                         |
|      | May .   | 72   | 36   | 51'72 | '95                   | 7                                  |                                              |                                         |
| 1871 | March.  | 64   | 32   | 46'33 | '76                   | 11                                 | 50'15                                        | 1'39                                    |
|      | April . | 57   | 40   | 51'10 | 3'36                  | 16                                 |                                              |                                         |
|      | May .   | 71   | 42   | 53'03 | '07                   | 3                                  |                                              |                                         |
| 1872 | March.  | 54   | 31   | 46'41 | 3'08                  | 14                                 | 49'21                                        | 2'24                                    |
|      | April . | 61   | 36   | 49'36 | '97                   | 8                                  |                                              |                                         |
|      | May .   | 68   | 36   | 51'86 | 2'67                  | 14                                 |                                              |                                         |
| 1873 | March.  | 59   | 34   | 44'85 | 2'08                  | 14                                 | 48'13                                        | 1'33                                    |
|      | April . | 65   | 32   | 47'89 | '85                   | 10                                 |                                              |                                         |
|      | May .   | 65   | 39   | 51'67 | 1'08                  | 12                                 |                                              |                                         |
| 1874 | March.  | 58   | 27   | 45'77 | '72                   | 12                                 | 49'81                                        | 1'12                                    |
|      | April . | 67   | 40   | 51'44 | 2'10                  | 11                                 |                                              |                                         |
|      | May .   | 67   | 36   | 52'23 | '56                   | 10                                 |                                              |                                         |
| 1875 | March.  | 55   | 31   | 42'46 | '84                   | 6                                  | 48'09                                        | 1'03                                    |
|      | April . | 65   | 36   | 47'44 | 1'35                  | 10                                 |                                              |                                         |
|      | May .   | 69   | 44   | 54'38 | '91                   | 8                                  |                                              |                                         |
| 1876 | March.  | 54   | 30   | 43'33 | 3'64                  | 18                                 | 48'28                                        | 1'86                                    |
|      | April . | 62   | 33   | 48'84 | 1'62                  | 16                                 |                                              |                                         |
|      | May .   | 67   | 36   | 52'68 | '32                   | 4                                  |                                              |                                         |
| 1877 | March.  | 56   | 29   | 43'62 | 2'18                  | 17                                 | 47'33                                        | 2'20                                    |
|      | April . | 58   | 37   | 48'04 | 2'44                  | 16                                 |                                              |                                         |
|      | May .   | 61   | 36   | 50'35 | 1'99                  | 12                                 |                                              |                                         |
| 1878 | March.  | 56   | 29   | 44'51 | 2'47                  | 10                                 | 49'68                                        | 2'65                                    |
|      | April . | 64   | 32   | 49'73 | 2'63                  | 19                                 |                                              |                                         |
|      | May .   | 63   | 42   | 54'80 | 2'86                  | 17                                 |                                              |                                         |
| 1879 | March.  | 57   | 32   | 43'20 | '84                   | 12                                 | 46'06                                        | 2'29                                    |
|      | April . | 57   | 30   | 45'23 | 3'88                  | 14                                 |                                              |                                         |
|      | May .   | 66   | 34   | 49'75 | 2'17                  | 18                                 |                                              |                                         |



TABLE IX.—SUMMER MONTHS.

*Lat. 50° 35' 33". Long. 1° 4' 49". Ht. of Instruments above Sea Level, High-water Spring Tides, 150 ft.*

|      |          | Max. | Min. | Mean  | Rainfall in inches | No. of days on which 'or fell | Mean Temperature of Summer Months | Mean Rainfall of Summer Months |
|------|----------|------|------|-------|--------------------|-------------------------------|-----------------------------------|--------------------------------|
| 1840 | June . . | 74   | 46   | 58'01 | '66                | 8                             | 59'82                             | 1'49                           |
|      | July . . | 70   | 49   | 58'03 | 2'23               | 12                            |                                   |                                |
|      | August . | 82   | 54   | 63'43 | 1'60               | 9                             |                                   |                                |
| 1841 | June . . | 68   | 45   | 56'93 | 1'19               | 9                             | 58'52                             | 1'66                           |
|      | July . . | 71   | 49   | 58'57 | 1'37               | 14                            |                                   |                                |
|      | August . | 75   | 48   | 60'06 | 2'42               | 12                            |                                   |                                |
| 1842 | June . . | 86   | 50   | 63'05 | 1'01               | 8                             | 63'66                             | 1'25                           |
|      | July . . | 76   | 50   | 61'02 | '65                | 7                             |                                   |                                |
|      | August . | 88   | 48   | 66'93 | 2'11               | 9                             |                                   |                                |
| 1843 | June . . | 72   | 46   | 57'23 | 1'19               | 11                            | 60'27                             | 1'86                           |
|      | July . . | 74   | 48   | 60'09 | 1'00               | 14                            |                                   |                                |
|      | August . | 82   | 49   | 63'41 | 3'41               | 11                            |                                   |                                |
| 1844 | June . . | 77   | 43   | 59'84 | '42                | 8                             | 60'92                             | 1'14                           |
|      | July . . | 78   | 51   | 62'49 | '95                | 14                            |                                   |                                |
|      | August . | 73   | 50   | 60'44 | 2'05               | 16                            |                                   |                                |
| 1845 | June . . | 84   | 49   | 61'11 | 1'09               | 11                            | 60'56                             | 1'23                           |
|      | July . . | 71   | 49   | 60'24 | 1'69               | 12                            |                                   |                                |
|      | August . | 79   | 46   | 60'33 | '92                | 15                            |                                   |                                |
| 1846 | June . . | 82   | 53   | 66'99 | '91                | 6                             | 65'67                             | 2'51                           |
|      | July . . | 86   | 55   | 64'64 | 2'37               | 16                            |                                   |                                |
|      | August . | 81   | 54   | 65'38 | 4'26               | 16                            |                                   |                                |
| 1847 | June . . | 74   | 45   | 59'15 | 1'05               | 9                             | 62'72                             | 1'01                           |
|      | July . . | 83   | 52   | 65'47 | 1'01               | 7                             |                                   |                                |
|      | August . | 78   | 46   | 63'54 | '99                | 11                            |                                   |                                |
| 1848 | June . . | 72   | 47   | 58'76 | 4'21               | 19                            | 60'31                             | 4'27                           |
|      | July . . | 75   | 48   | 62'12 | 3'19               | 12                            |                                   |                                |
|      | August . | 67   | 51   | 60'07 | 5'41               | 28                            |                                   |                                |
| 1849 | June . . | 75   | 46   | 59'81 | 1'59               | 7                             | 61'29                             | 1'51                           |
|      | July . . | 74   | 48   | 61'48 | 2'08               | 11                            |                                   |                                |
|      | August . | 72   | 49   | 62'59 | '86                | 7                             |                                   |                                |

TABLE X.—SUMMER MONTHS.

*Lat. 50° 35' 33". Long. 1° 4' 49". Ht. of Instruments above Sea Level, High-water Spring Tides, 150 ft.*

|      |          | Max. | Min. | Mean  | Rainfall in inches | No. of days on which or fell | Mean Temperature of Summer Months | Mean Rainfall of Summer Months |
|------|----------|------|------|-------|--------------------|------------------------------|-----------------------------------|--------------------------------|
| 1850 | June . . | 76   | 45   | 60·71 | 1·67               | 9                            | 61·44                             | 2·27                           |
|      | July . . | 75   | 48   | 62·14 | 1·95               | 15                           |                                   |                                |
|      | August . | 76   | 47   | 61·49 | 3·19               | 15                           |                                   |                                |
| 1851 | June . . | 76   | 44   | 58·93 | 1·48               | 12                           | 61·35                             | 1·79                           |
|      | July . . | 77   | 48   | 61·61 | 2·25               | 13                           |                                   |                                |
|      | August . | 77   | 48   | 63·41 | 1·66               | 13                           |                                   |                                |
| 1852 | June . . | 66   | 46   | 56·98 | 4·31               | 22                           | 62·31                             | 3·10                           |
|      | July . . | 82   | 55   | 67·17 | 1·70               | 5                            |                                   |                                |
|      | August . | 73   | 55   | 63·30 | 3·29               | 16                           |                                   |                                |
| 1853 | June . . | 72   | 47   | 57·83 | 3·01               | 20                           | 59·87                             | 2·83                           |
|      | July . . | 77   | 52   | 60·09 | 2·46               | 19                           |                                   |                                |
|      | August . | 69   | 52   | 60·70 | 3·03               | 8                            |                                   |                                |
| 1854 | June . . | 68   | 46   | 56·65 | 2·08               | 12                           | 60·51                             | 1·24                           |
|      | July . . | 81   | 51   | 61·96 | ·42                | 10                           |                                   |                                |
|      | August . | 78   | 52   | 12·93 | 1·24               | 10                           |                                   |                                |
| 1855 | June . . | 70   | 42   | 56·55 | ·87                | 8                            | 60·27                             | 1·54                           |
|      | July . . | 71   | 51   | 61·51 | 3·09               | 14                           |                                   |                                |
|      | August . | 75   | 52   | 62·77 | ·66                | 9                            |                                   |                                |
| 1856 | June . . | 76   | 45   | 58·74 | 1·49               | 7                            | 61·28                             | 2·03                           |
|      | July . . | 74   | 47   | 60·67 | 1·10               | 9                            |                                   |                                |
|      | August . | 82   | 48   | 64·48 | 3·52               | 13                           |                                   |                                |
| 1857 | June . . | 79   | 50   | 62·08 | 1·43               | 9                            | 64·07                             | 1·47                           |
|      | July . . | 79   | 51   | 63·81 | 1·17               | 7                            |                                   |                                |
|      | August . | 79   | 54   | 66·33 | 1·81               | 11                           |                                   |                                |
| 1858 | June . . | 82   | 51   | 63·53 | 1·15               | 4                            | 62·43                             | 1·95                           |
|      | July . . | 73   | 50   | 60·86 | 3·06               | 12                           |                                   |                                |
|      | August . | 77   | 50   | 62·90 | 1·64               | 12                           |                                   |                                |
| 1859 | June . . | 72   | 47   | 61·29 | ·96                | 8                            | 14·61                             | 1·89                           |
|      | July . . | 79   | 53   | 67·49 | 3·42               | 8                            |                                   |                                |
|      | August . | 77   | 53   | 65·06 | 1·29               | 8                            |                                   |                                |



TABLE XI.—SUMMER MONTHS.

*Lat. 50° 35' 33". Long. 1° 4' 49". Ht. of Instruments above Sea Level, High-water Spring Tides, 150 ft.*

|      |          | Max. | Min. | Mean  | Rainfall in inches | No. of days on which '01 fell | Mean Temperature of Summer Months | Mean Rainfall of Summer Months |
|------|----------|------|------|-------|--------------------|-------------------------------|-----------------------------------|--------------------------------|
| 1860 | June . . | 63   | 46   | 55·18 | 4·77               | 21                            | 57·53                             | 3·31                           |
|      | July . . | 70   | 49   | 58·74 | 2·10               | 10                            |                                   |                                |
|      | August . | 66   | 52   | 58·69 | 3·06               | 21                            |                                   |                                |
| 1861 | June . . | 75   | 49   | 59·59 | 2·90               | 16                            | 60·94                             | 2·09                           |
|      | July . . | 69   | 52   | 60·98 | 2·71               | 18                            |                                   |                                |
|      | August . | 71   | 51   | 62·25 | ·66                | 11                            |                                   |                                |
| 1862 | June . . | 66   | 48   | 56·91 | 1·53               | 9                             | 59·08                             | 1·56                           |
|      | July . . | 69   | 49   | 59·43 | 1·81               | 17                            |                                   |                                |
|      | August . | 69   | 51   | 60·91 | 1·35               | 10                            |                                   |                                |
| 1863 | June . . | 69   | 50   | 57·96 | 3·15               | 14                            | 60·99                             | 1·99                           |
|      | July . . | 74   | 50   | 62·17 | ·70                | 3                             |                                   |                                |
|      | August . | 71   | 48   | 62·86 | 2·12               | 14                            |                                   |                                |
| 1864 | June . . | 68   | 48   | 58·03 | 1·20               | 12                            | 60·29                             | ·80                            |
|      | July . . | 74   | 49   | 62·09 | ·38                | 10                            |                                   |                                |
|      | August . | 71   | 45   | 60·77 | ·82                | 8                             |                                   |                                |
| 1865 | June . . | 75   | 48   | 60·98 | 2·30               | 5                             | 62·09                             | 2·03                           |
|      | July . . | 75   | 51   | 63·64 | 1·36               | 9                             |                                   |                                |
|      | August . | 71   | 47   | 61·67 | 2·44               | 14                            |                                   |                                |
| 1866 | June . . | 78   | 44   | 61·26 | 1·69               | 12                            | 61·81                             | 2·46                           |
|      | July . . | 76   | 53   | 62·77 | ·81                | 8                             |                                   |                                |
|      | August . | 70   | 51   | 61·40 | 2·88               | 14                            |                                   |                                |
| 1867 | June . . | 80   | 45   | 60·28 | 1·08               | 4                             | 61·45                             | 2·09                           |
|      | July . . | 72   | 49   | 60·99 | 2·64               | 13                            |                                   |                                |
|      | August . | 74   | 51   | 63·09 | 2·51               | 9                             |                                   |                                |
| 1868 | June . . | 74   | 47   | 61·14 | ·40                | 2                             | 63·94                             | 1·79                           |
|      | July . . | 84   | 55   | 67·25 | ·65                | 4                             |                                   |                                |
|      | August . | 75   | 52   | 63·43 | 4·33               | 15                            |                                   |                                |
| 1869 | June . . | 71   | 46   | 56·06 | 2·11               | 7                             | 60·36                             | 1·26                           |
|      | July . . | 77   | 51   | 63·04 | ·93                | 5                             |                                   |                                |
|      | August . | 78   | 49   | 61·98 | ·76                | 5                             |                                   |                                |

TABLE XII.—SUMMER MONTHS.

*Lat. 50° 35' 33". Long. 1° 4' 49". Ht. of Instruments above Sea Level, High-water Spring Tides, 150 ft.*

|      |          | Max. | Min. | Mean  | Rainfall in inches | No. of days on which 'or fell | Mean Temperature of Summer Months | Mean Rainfall of Summer Months |
|------|----------|------|------|-------|--------------------|-------------------------------|-----------------------------------|--------------------------------|
| 1870 | June . . | 73   | 48   | 59.56 | .23                | 2                             | 61.44                             | 1.38                           |
|      | July . . | 77   | 51   | 62.91 | 2.20               | 7                             |                                   |                                |
|      | August . | 75   | 47   | 61.85 | 1.73               | 8                             |                                   |                                |
| 1871 | June . . | 65   | 41   | 55.83 | 2.57               | 10                            | 60.44                             | 2.71                           |
|      | July . . | 70   | 51   | 60.33 | 4.18               | 14                            |                                   |                                |
|      | August . | 82   | 52   | 65.17 | 1.38               | 4                             |                                   |                                |
| 1872 | June . . | 73   | 44   | 58.14 | 2.17               | 14                            | 61.50                             | 2.48                           |
|      | July . . | 74   | 53   | 63.59 | 4.19               | 9                             |                                   |                                |
|      | August . | 74   | 51   | 62.77 | 1.09               | 8                             |                                   |                                |
| 1873 | June . . | 69   | 48   | 58.36 | 2.32               | 10                            | 60.95                             | 1.96                           |
|      | July . . | 75   | 54   | 61.77 | 1.83               | 8                             |                                   |                                |
|      | August . | 75   | 51   | 62.73 | 1.75               | 13                            |                                   |                                |
| 1874 | June . . | 75   | 50   | 59.06 | 2.17               | 10                            | 61.61                             | 1.33                           |
|      | July . . | 80   | 52   | 63.80 | .52                | 4                             |                                   |                                |
|      | August . | 74   | 49   | 61.98 | 1.32               | 15                            |                                   |                                |
| 1875 | June . . | 72   | 49   | 58.28 | 2.20               | 12                            | 60.47                             | 2.39                           |
|      | July . . | 73   | 50   | 60.25 | 3.35               | 12                            |                                   |                                |
|      | August . | 73   | 49   | 62.90 | 1.62               | 13                            |                                   |                                |
| 1876 | June . . | 74   | 45   | 58.53 | .93                | 9                             | 62.29                             | 2.03                           |
|      | July . . | 84   | 53   | 64.54 | 1.00               | 9                             |                                   |                                |
|      | August . | 79   | 48   | 63.62 | 4.17               | 12                            |                                   |                                |
| 1877 | June . . | 75   | 49   | 60.43 | .67                | 6                             | 61.05                             | 1.91                           |
|      | July . . | 73   | 48   | 60.65 | 2.45               | 15                            |                                   |                                |
|      | August . | 71   | 48   | 62.07 | 2.62               | 16                            |                                   |                                |
| 1878 | June . . | 79   | 49   | 60.60 | .85                | 7                             | 62.73                             | 3.54                           |
|      | July . . | 80   | 53   | 63.80 | 3.74               | 9                             |                                   |                                |
|      | August . | 71   | 54   | 63.80 | 6.04               | 21                            |                                   |                                |
| 1879 | June . . | 64   | 47   | 55.90 | 4.35               | 22                            | 58.35                             | 4.37                           |
|      | July . . | 70   | 51   | 58.35 | 3.59               | 21                            |                                   |                                |
|      | August . | 69   | 54   | 60.80 | 5.19               | 18                            |                                   |                                |



TABLE XIII.—AUTUMN MONTHS.

*Lat. 50° 35' 33". Long. 1° 4' 49". Ht. of Instruments above Sea Level, High-water Spring Tides, 150 ft.*

|      |             | Max. | Min. | Mean  | Rainfall in inches | No. of days on which 'or fell | Mean Temperature of Autumn Months | Mean Rainfall of Autumn Months |
|------|-------------|------|------|-------|--------------------|-------------------------------|-----------------------------------|--------------------------------|
| 1840 | September . | 79   | 40   | 55.43 | 4.08               | 16                            | 51.94                             | 3.31                           |
|      | October .   | 64   | 38   | 51.91 | 1.24               | 9                             |                                   |                                |
|      | November .  | 58   | 33   | 48.48 | 4.62               | 18                            |                                   |                                |
| 1841 | September . | 74   | 47   | 60.26 | 2.36               | 13                            | 53.15                             | 3.64                           |
|      | October .   | 64   | 39   | 52.10 | 5.18               | 23                            |                                   |                                |
|      | November .  | 56   | 31   | 47.11 | 3.38               | 17                            |                                   |                                |
| 1842 | September . | 74   | 45   | 59.13 | 4.09               | 15                            | 52.16                             | 3.36                           |
|      | October .   | 67   | 33   | 50.15 | 1.79               | 5                             |                                   |                                |
|      | November .  | 55   | 34   | 47.21 | 4.22               | 22                            |                                   |                                |
| 1843 | September . | 79   | 37   | 64.54 | .68                | 10                            | 55.49                             | 2.63                           |
|      | October .   | 71   | 34   | 53.67 | 5.51               | 17                            |                                   |                                |
|      | November .  | 61   | 33   | 48.28 | 1.70               | 17                            |                                   |                                |
| 1844 | September . | 76   | 44   | 61.06 | 1.41               | 9                             | 54.42                             | 3.58                           |
|      | October .   | 67   | 41   | 53.91 | 4.92               | 18                            |                                   |                                |
|      | November .  | 59   | 35   | 48.29 | 4.41               | 15                            |                                   |                                |
| 1845 | September . | 75   | 42   | 58.56 | 2.32               | 13                            | 54.66                             | 2.59                           |
|      | October .   | 65   | 44   | 54.66 | 1.83               | 10                            |                                   |                                |
|      | November .  | 61   | 35   | 50.78 | 3.64               | 21                            |                                   |                                |
| 1846 | September . | 80   | 47   | 64.36 | 1.58               | 11                            | 55.98                             | 3.28                           |
|      | October .   | 65   | 36   | 54.69 | 5.94               | 23                            |                                   |                                |
|      | November .  | 60   | 30   | 48.89 | 2.34               | 12                            |                                   |                                |
| 1847 | September . | 70   | 44   | 57.13 | .95                | 9                             | 55.03                             | 1.87                           |
|      | October .   | 71   | 45   | 56.66 | 2.32               | 17                            |                                   |                                |
|      | November .  | 64   | 34   | 51.31 | 2.34               | 15                            |                                   |                                |
| 1848 | September . | 70   | 44   | 59.71 | 2.35               | 9                             | 53.42                             | 2.68                           |
|      | October .   | 70   | 36   | 54.49 | 3.68               | 21                            |                                   |                                |
|      | November .  | 56   | 31   | 46.06 | 2.03               | 18                            |                                   |                                |
| 1849 | September . | 75   | 44   | 60.51 | 4.03               | 12                            | 54.66                             | 2.83                           |
|      | October .   | 65   | 40   | 54.44 | 2.95               | 16                            |                                   |                                |
|      | November .  | 61   | 30   | 49.03 | 1.53               | 13                            |                                   |                                |

TABLE XIV.—AUTUMN MONTHS.

*Lat. 50° 35' 33". Long. 1° 4' 49". Ht. of Instruments above Sea Level, High-water Spring Tides, 150 ft.*

|      |             | Max. | Min. | Mean  | Rainfall in inches | No. of days on which<br>or fell | Mean Temperature of<br>Autumn Months | Mean Rainfall of<br>Autumn Months |
|------|-------------|------|------|-------|--------------------|---------------------------------|--------------------------------------|-----------------------------------|
| 1850 | September . | 68   | 46   | 58.70 | 3.56               | 10                              | 52.69                                | 3.64                              |
|      | October .   | 62   | 36   | 49.86 | 2.32               | 16                              |                                      |                                   |
|      | November .  | 58   | 34   | 49.53 | 4.05               | 20                              |                                      |                                   |
| 1851 | September . | 73   | 43   | 60.19 | .15                | 6                               | 52.71                                | 2.03                              |
|      | October .   | 66   | 37   | 55.51 | 4.67               | 18                              |                                      |                                   |
|      | November .  | 54   | 30   | 42.45 | 1.28               | 9                               |                                      |                                   |
| 1852 | September . | 71   | 46   | 59.86 | 7.21               | 16                              | 54.53                                | 6.87                              |
|      | October .   | 61   | 38   | 51.86 | 5.99               | 18                              |                                      |                                   |
|      | November .  | 60   | 35   | 51.89 | 7.42               | 27                              |                                      |                                   |
| 1853 | September . | 70   | 46   | 57.53 | 2.39               | 15                              | 53.07                                | 3.47                              |
|      | October .   | 62   | 40   | 54.17 | 6.72               | 22                              |                                      |                                   |
|      | November .  | 60   | 35   | 47.53 | 1.31               | 9                               |                                      |                                   |
| 1854 | September . | 74   | 51   | 61.99 | 1.31               | 8                               | 53.43                                | 2.50                              |
|      | October .   | 70   | 38   | 53.61 | 4.28               | 17                              |                                      |                                   |
|      | November .  | 60   | 31   | 44.70 | 1.91               | 9                               |                                      |                                   |
| 1855 | September . | 73   | 46   | 60.53 | 2.72               | 5                               | 53.24                                | 3.31                              |
|      | October .   | 64   | 40   | 54.57 | 6.23               | 24                              |                                      |                                   |
|      | November .  | 58   | 34   | 44.63 | 1.00               | 11                              |                                      |                                   |
| 1856 | September . | 68   | 44   | 58.03 | 3.82               | 15                              | 53.17                                | 2.71                              |
|      | October .   | 64   | 43   | 56.18 | 3.47               | 11                              |                                      |                                   |
|      | November .  | 57   | 26   | 45.31 | .84                | 9                               |                                      |                                   |
| 1857 | September . | 74   | 51   | 62.98 | 3.59               | 12                              | 57.08                                | 4.26                              |
|      | October .   | 69   | 43   | 57.40 | 5.87               | 23                              |                                      |                                   |
|      | November .  | 62   | 36   | 50.86 | 3.34               | 15                              |                                      |                                   |
| 1858 | September . | 75   | 50   | 62.36 | 2.08               | 16                              | 53.65                                | 2.17                              |
|      | October .   | 66   | 37   | 54.20 | 2.29               | 14                              |                                      |                                   |
|      | November .  | 55   | 31   | 44.39 | 2.14               | 13                              |                                      |                                   |
| 1859 | September . | 69   | 45   | 59.18 | 4.06               | 17                              | 54.07                                | 4.84                              |
|      | October .   | 70   | 34   | 55.23 | 5.60               | 19                              |                                      |                                   |
|      | November .  | 60   | 35   | 47.81 | 4.87               | 14                              |                                      |                                   |



TABLE XV.—AUTUMN MONTHS.

*Lat. 50° 35' 33". Long. 1° 4' 49". Ht. of Instruments above Sea Level, High-water Spring Tides, 150 ft.*

|      |             | Max. | Min. | Mean  | Rainfall in inches | No. of days on which 'or fell | Mean Temperature of Autumn Months | Mean Rainfall of Autumn Months |
|------|-------------|------|------|-------|--------------------|-------------------------------|-----------------------------------|--------------------------------|
| 1860 | September . | 65   | 41   | 55'38 | 4'01               | 18                            | 51'43                             | 3'16                           |
|      | October .   | 63   | 33   | 53'99 | 2'42               | 14                            |                                   |                                |
|      | November .  | 53   | 37   | 44'93 | 3'05               | 14                            |                                   |                                |
| 1861 | September . | 69   | 47   | 59'14 | 3'27               | 13                            | 53'97                             | 4'08                           |
|      | October .   | 68   | 43   | 58'07 | 1'89               | 9                             |                                   |                                |
|      | November .  | 55   | 31   | 44'70 | 7'10               | 22                            |                                   |                                |
| 1862 | September . | 70   | 48   | 59'95 | 1'74               | 15                            | 53'01                             | 3'32                           |
|      | October .   | 67   | 40   | 55'31 | 6'87               | 17                            |                                   |                                |
|      | November .  | 58   | 31   | 43'78 | 1'36               | 9                             |                                   |                                |
| 1863 | September . | 65   | 45   | 56'59 | 3'62               | 17                            | 53'70                             | 3'33                           |
|      | October .   | 61   | 42   | 55'09 | 3'30               | 20                            |                                   |                                |
|      | November .  | 58   | 36   | 49'44 | 3'07               | 13                            |                                   |                                |
| 1864 | September . | 67   | 48   | 59'55 | 2'41               | 19                            | 53'15                             | 2'69                           |
|      | October .   | 62   | 44   | 53'62 | 1'17               | 9                             |                                   |                                |
|      | November .  | 55   | 35   | 46'30 | 4'49               | 15                            |                                   |                                |
| 1865 | September . | 75   | 52   | 65'35 | '14                | 3                             | 56'87                             | 4'05                           |
|      | October .   | 71   | 40   | 56'46 | 8'84               | 21                            |                                   |                                |
|      | November .  | 57   | 38   | 48'80 | 3'18               | 15                            |                                   |                                |
| 1866 | September . | 69   | 49   | 58'54 | 7'15               | 25                            | 54'39                             | 3'64                           |
|      | October .   | 66   | 42   | 55'62 | 1'90               | 10                            |                                   |                                |
|      | November .  | 59   | 32   | 49'03 | 1'88               | 14                            |                                   |                                |
| 1867 | September . | 74   | 44   | 61'04 | 1'67               | 8                             | 53'29                             | 2'55                           |
|      | October .   | 61   | 38   | 53'01 | 4'37               | 20                            |                                   |                                |
|      | November .  | 61   | 35   | 45'83 | 1'62               | 4                             |                                   |                                |
| 1868 | September . | 77   | 51   | 62'76 | 2'45               | 11                            | 52'92                             | 2'30                           |
|      | October .   | 64   | 34   | 52'07 | 3'38               | 13                            |                                   |                                |
|      | November .  | 56   | 28   | 43'93 | 1'07               | 7                             |                                   |                                |
| 1869 | September . | 68   | 47   | 60'46 | 4'29               | 14                            | 53'18                             | 2'56                           |
|      | October .   | 72   | 33   | 52'25 | 1'77               | 9                             |                                   |                                |
|      | November .  | 56   | 32   | 46'83 | 1'62               | 10                            |                                   |                                |

TABLE XVI.—AUTUMN MONTHS.

*Lat. 50° 35' 33". Long. 1° 4' 49". Ht. of Instruments above Sea Level, High-water Spring Tides, 150 ft.*

|      |             | Max. | Min. | Mean  | Rainfall in inches | No. of days on which or fell | Mean Temperature of Autumn Months | Mean Rainfall of Autumn Months |
|------|-------------|------|------|-------|--------------------|------------------------------|-----------------------------------|--------------------------------|
| 1870 | September . | 69   | 50   | 59'33 | 1'23               | 8                            | 52'58                             | 2'60                           |
|      | October .   | 65   | 38   | 53'49 | 4'19               | 19                           |                                   |                                |
|      | November .  | 55   | 32   | 44'93 | 2'39               | 11                           |                                   |                                |
| 1871 | September . | 72   | 44   | 59'38 | 4'96               | 14                           | 52'09                             | 2'71                           |
|      | October .   | 63   | 44   | 54'01 | 1'70               | 15                           |                                   |                                |
|      | November .  | 58   | 31   | 42'89 | '47                | 4                            |                                   |                                |
| 1872 | September . | 72   | 40   | 58'39 | 1'46               | 13                           | 52'72                             | 4'01                           |
|      | October .   | 62   | 39   | 52'01 | 5'27               | 18                           |                                   |                                |
|      | November .  | 59   | 33   | 47'76 | 5'31               | 22                           |                                   |                                |
| 1873 | September . | 66   | 46   | 57'73 | 2'65               | 14                           | 52'66                             | 3'40                           |
|      | October .   | 67   | 37   | 52'35 | 4'83               | 19                           |                                   |                                |
|      | November .  | 58   | 37   | 47'91 | 2'74               | 16                           |                                   |                                |
| 1874 | September . | 70   | 48   | 60'43 | 3'70               | 16                           | 54'42                             | 3'77                           |
|      | October .   | 66   | 40   | 55'07 | 4'57               | 21                           |                                   |                                |
|      | November .  | 61   | 31   | 47'78 | 3'06               | 17                           |                                   |                                |
| 1875 | September . | 76   | 50   | 62'88 | 1'91               | 10                           | 53'55                             | 4'32                           |
|      | October .   | 65   | 40   | 52'47 | 5'37               | 18                           |                                   |                                |
|      | November .  | 58   | 29   | 45'31 | 5'71               | 18                           |                                   |                                |
| 1876 | September . | 67   | 46   | 58'91 | 4'62               | 20                           | 54'33                             | 3'46                           |
|      | October .   | 66   | 39   | 55'93 | 1'60               | 12                           |                                   |                                |
|      | November .  | 60   | 30   | 48'01 | 4'18               | 17                           |                                   |                                |
| 1877 | September . | 66   | 41   | 56'03 | 1'86               | 8                            | 54'82                             | 4'64                           |
|      | October .   | 64   | 38   | 53'52 | 3'09               | 15                           |                                   |                                |
|      | November .  | 60   | 34   | 54'91 | 8'99               | 25                           |                                   |                                |
| 1878 | September . | 70   | 45   | 59'14 | 2'19               | 12                           | 51'85                             | 3'16                           |
|      | October .   | 67   | 35   | 54'91 | 3'18               | 13                           |                                   |                                |
|      | November .  | 52   | 33   | 41'51 | 4'11               | 19                           |                                   |                                |
| 1879 | September . | 66   | 44   | 58'29 | 3'52               | 15                           | 51'00                             | 1'87                           |
|      | October .   | 63   | 34   | 52'38 | 1'23               | 9                            |                                   |                                |
|      | November .  | 59   | 28   | 42'33 | '88                | 6                            |                                   |                                |



TABLE XVII.  
*Means of Winter Months from 1840 to 1879.*

|   | 1840 to 1849 | 1850 to 1859 | 1860 to 1869 | 1870 to 1879 |
|---|--------------|--------------|--------------|--------------|
| 0 | 43'05        | 42'00        | 42'37        | 39'61        |
| 1 | 36'90        | 45'41        | 40'83        | 38'46        |
| 2 | 41'27        | 44'42        | 43'00        | 44'05        |
| 3 | 42'99        | 44'24        | 45'09        | 42'61        |
| 4 | 43'71        | 41'28        | 42'31        | 44'53        |
| 5 | 39'31        | 39'08        | 40'28        | 40'72        |
| 6 | 45'86        | 42'28        | 45'34        | 39'82        |
| 7 | 39'51        | 42'32        | 44'02        | 46'38        |
| 8 | 42'77        | 46'17        | 41'52        | 43'93        |
| 9 | 45'33        | 41'41        | 47'13        | 37'67        |

*Means of Spring Months from 1840 to 1879.*

|   | 1840 to 1849 | 1850 to 1859 | 1860 to 1869 | 1870 to 1879 |
|---|--------------|--------------|--------------|--------------|
| 0 | 49'96        | 48'92        | 47'65        | 47'29        |
| 1 | 50'79        | 48'93        | 49'62        | 50'15        |
| 2 | 49'71        | 48'62        | 50'01        | 49'21        |
| 3 | 49'70        | 48'11        | 49'96        | 48'13        |
| 4 | 51'03        | 49'86        | 50'39        | 53'84        |
| 5 | 47'01        | 46'14        | 49'81        | 53'28        |
| 6 | 51'17        | 47'60        | 48'69        | 54'26        |
| 7 | 49'16        | 48'90        | 49'15        | 47'33        |
| 8 | 52'27        | 48'88        | 50'74        | 49'68        |
| 9 | 49'10        | 50'07        | 47'69        | 46'06        |

TABLE XVIII.

*Means of Summer Months from 1840 to 1879.*

|   | 1840 to 1849 | 1850 to 1859 | 1860 to 1869 | 1870 to 1879 |
|---|--------------|--------------|--------------|--------------|
| 0 | 59'82        | 61'44        | 57'53        | 61'44        |
| 1 | 58'52        | 61'35        | 60'94        | 60'44        |
| 2 | 63'66        | 62'31        | 59'08        | 61'50        |
| 3 | 60'27        | 59'87        | 60'99        | 60'95        |
| 4 | 60'92        | 60'51        | 60'29        | 61'61        |
| 5 | 60'56        | 60'27        | 62'09        | 60'47        |
| 6 | 65'67        | 61'28        | 61'81        | 62'29        |
| 7 | 62'72        | 64'07        | 61'45        | 61'05        |
| 8 | 60'31        | 62'43        | 63'94        | 62'73        |
| 9 | 61'29        | 64'61        | 60'36        | 58'35        |

*Means of Autumn Months from 1840 to 1879.*

|   | 1840 to 1849 | 1850 to 1859 | 1860 to 1869 | 1870 to 1879 |
|---|--------------|--------------|--------------|--------------|
| 0 | 51'94        | 52'69        | 51'43        | 52'38        |
| 1 | 53'15        | 52'71        | 53'97        | 52'09        |
| 2 | 52'16        | 54'53        | 53'01        | 52'72        |
| 3 | 55'49        | 53'07        | 53'70        | 52'66        |
| 4 | 54'42        | 53'43        | 53'15        | 54'42        |
| 5 | 54'66        | 52'24        | 56'87        | 53'55        |
| 6 | 55'98        | 53'17        | 54'39        | 54'33        |
| 7 | 55'03        | 57'08        | 53'29        | 54'82        |
| 8 | 53'42        | 53'65        | 52'92        | 51'85        |
| 9 | 54'66        | 54'07        | 53'18        | 51'00        |



TABLE XIX.

*Mean Temperature during the Winter, Spring, Summer, and Autumn Months from 1840 to 1879.*

|           | 1840 to 1849 | 1850 to 1859 | 1860 to 1869 | 1870 to 1879 |
|-----------|--------------|--------------|--------------|--------------|
| Winter .  | 41·87        | 42·89        | 43·19        | 41·78        |
| Spring. . | 49·99        | 48·60        | 49·35        | 49·92        |
| Summer .  | 61·37        | 61·78        | 60·85        | 61·07        |
| Autumn .  | 54·09        | 53·76        | 53·59        | 52·98        |

*Mean Temperature during Winter, Spring, Summer, and Autumn for Forty Years.*

| Winter | Spring | Summer | Autumn |
|--------|--------|--------|--------|
| 42·43  | 49·46  | 61·26  | 53·52  |

*Mean Daily Range during the Winter, Spring, Summer, and Autumn Months from 1840 to 1879.*

|           | 1840 to 1849 | 1850 to 1859 | 1860 to 1869 | 1870 to 1879 |
|-----------|--------------|--------------|--------------|--------------|
| Winter .  | 7·41         | 7·42         | 7·15         | 6·74         |
| Spring. . | 11·75        | 10·75        | 9·96         | 9·99         |
| Summer .  | 11·36        | 10·04        | 9·26         | 10·33        |
| Autumn .  | 9·57         | 8·61         | 8·22         | 8·82         |

*Mean Daily Range for Forty Years.*

| Winter | Spring | Summer | Autumn |
|--------|--------|--------|--------|
| 7·10   | 10·61  | 10·24  | 8·80   |

TABLE XX.—*Winters with little or no Frost.*

In 1862-63 and 1868-69 the minimum thermometer did not fall below 33°.

|         |                | Max. | Min. | Mean  |
|---------|----------------|------|------|-------|
| 1845-46 | December . . . | 54   | 31   | 45°04 |
|         | January . . .  | 54   | 34   | 46°49 |
|         | February . . . | 55   | 29   | 46°07 |
| 1848-49 | December . . . | 59   | 31   | 46°49 |
|         | January . . .  | 52   | 29   | 43°53 |
|         | February . . . | 54   | 35   | 45°99 |
| 1850-51 | December . . . | 56   | 33   | 45°30 |
|         | January . . .  | 52   | 40   | 46°74 |
|         | February . . . | 52   | 32   | 44°19 |
| 1862-63 | December . . . | 54   | 33   | 46°14 |
|         | January . . .  | 52   | 34   | 43°83 |
|         | February . . . | 53   | 35   | 45°32 |
| 1865-66 | December . . . | 54   | 33   | 45°85 |
|         | January . . .  | 54   | 30   | 45°98 |
|         | February . . . | 54   | 32   | 44°22 |
| 1868-69 | December . . . | 55   | 37   | 48°56 |
|         | January . . .  | 53   | 33   | 45°30 |
|         | February . . . | 55   | 34   | 47°53 |
| 1876-77 | December . . . | 57   | 32   | 47°00 |
|         | January . . .  | 54   | 34   | 46°17 |
|         | February . . . | 54   | 29   | 45°96 |

*Coldest Winters.*

|         |                | Max. | Min. | Mean  |
|---------|----------------|------|------|-------|
| 1840-41 | December . . . | 54   | 21   | 36°00 |
|         | January . . .  | 50   | 25   | 38°06 |
|         | February . . . | 54   | 20   | 36°65 |
| 1854-55 | December . . . | 54   | 32   | 44°86 |
|         | January . . .  | 53   | 25   | 38°67 |
|         | February . . . | 49   | 21   | 33°73 |
| 1869-70 | December . . . | 52   | 22   | 39°90 |
|         | January . . .  | 51   | 31   | 41°33 |
|         | February . . . | 49   | 24   | 37°61 |
| 1870-71 | December . . . | 53   | 19   | 35°64 |
|         | January . . .  | 46   | 23   | 36°30 |
|         | February . . . | 51   | 27   | 43°44 |
| 1878-79 | December . . . | 51   | 24   | 37°40 |
|         | January . . .  | 49   | 23   | 35°41 |
|         | February . . . | 50   | 27   | 40°21 |

*Cold Summers in Forty Years.*

| 1840  | 1841  | 1853  | 1860  | 1862  | 1879  |
|-------|-------|-------|-------|-------|-------|
| 59°82 | 58°52 | 59°87 | 57°52 | 59°08 | 58°35 |



TABLE XXI.

The following table is due to the research of E. G. Aldridge, Esq., member of the Meteorological Society, and is here inserted as showing the comparative coolness of the summer at the Undercliff.

*Annual Maxima from 1848 to 1872 (Twenty-five Years).*

|           | Ventnor | Helston (Cornwall) | Greenwich |
|-----------|---------|--------------------|-----------|
| 1848. . . | 75      | 78                 | 84.5      |
| 1849. . . | 75      | 80                 | 84.1      |
| 1850. . . | 76      | 86                 | 87.0      |
| 1851. . . | 77      | 79                 | 87.0      |
| 1852. . . | 82      | 85                 | 93.0      |
| 1853. . . | 77      | 80                 | 81.7      |
| 1854. . . | 81      | 88                 | 88.7      |
| 1855. . . | 75      | 85                 | 83.5      |
| 1856. . . | 82      | 87                 | 89.8      |
| 1857. . . | 79      | 83                 | 92.7      |
| 1858. . . | 82      | 88                 | 94.5      |
| 1859. . . | 79      | 90                 | 93.0      |
| 1860. . . | 70      | 75                 | 76.5      |
| 1861. . . | 75      | 79                 | 89.3      |
| 1862. . . | 70      | 75                 | 81.5      |
| 1863. . . | 74      | 85                 | 86.0      |
| 1864. . . | 74      | 85                 | 88.6      |
| 1865. . . | 75      | 87                 | 87.6      |
| 1866. . . | 78      | 87                 | 87.2      |
| 1867. . . | 80      | 86                 | 89.0      |
| 1868. . . | 84      | 86                 | 96.6      |
| 1869. . . | 78      | 86                 | 90.9      |
| 1870. . . | 77      | 84                 | 90.2      |
| 1871. . . | 82      | 86                 | 89.2      |
| 1872. . . | 74      | 84                 | 90.9      |
| Means. .  | 77.2    | 83.6               | 88.0      |

TABLE XXII.—RAINFALL. VENTNOR, ISLE OF WIGHT.

*Diameter of Gauge, 12 inches. Height above Ground, 3 feet. Height above Sea Level, 150 feet.*

|                | 1840  | 1841  | 1842  | 1843  | 1844  | 1845  | 1846  | 1847  | 1848  | 1849  |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| January . . .  | 2·88  | 2·88  | ·58   | 2·03  | 2·30  | 2·12  | 3·44  | 2·15  | 2·38  | 2·91  |
| February . . . | 1·08  | 1·71  | 1·47  | 2·61  | 2·91  | 1·26  | 1·15  | 1·56  | 4·97  | 2·72  |
| March . . .    | ·03   | ·88   | 1·34  | 1·19  | 3·29  | ·82   | 3·38  | 1·72  | 3·13  | ·88   |
| April . . .    | 0     | ·85   | ·03   | 1·94  | ·13   | ·90   | 2·21  | 1·94  | 3·49  | 2·74  |
| May . . .      | 1·34  | 1·82  | ·81   | 4·63  | ·32   | 1·36  | 1·05  | 1·57  | ·55   | 2·84  |
| June . . .     | ·66   | 1·19  | 1·01  | 1·19  | ·42   | 1·09  | ·91   | 1·05  | 4·21  | 1·59  |
| July . . .     | 2·23  | 1·37  | ·65   | 1·00  | ·95   | 1·69  | 2·37  | 1·01  | 3·19  | 2·08  |
| August . . .   | 1·60  | 2·42  | 2·11  | 3·41  | 2·05  | ·92   | 4·26  | ·99   | 5·41  | ·86   |
| September . .  | 4·08  | 2·36  | 4·09  | ·68   | 1·41  | 2·32  | 1·58  | ·95   | 2·35  | 4·03  |
| October . . .  | 1·24  | 5·18  | 1·79  | 5·51  | 4·92  | 1·83  | 5·94  | 2·32  | 3·68  | 2·95  |
| November . . . | 4·62  | 3·38  | 4·22  | 1·70  | 4·41  | 3·64  | 2·34  | 2·34  | 2·03  | 1·53  |
| December . . . | ·74   | 2·64  | ·87   | 1·08  | ·27   | 3·54  | 1·85  | 3·05  | 3·99  | 3·62  |
|                | 20·50 | 26·68 | 18·97 | 26·94 | 23·38 | 21·49 | 30·48 | 20·65 | 39·38 | 28·75 |

|                | 1850  | 1851  | 1852  | 1853  | 1854  | 1855  | 1856  | 1857  | 1858  | 1859  |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| January . . .  | 1·62  | 3·31  | 3·72  | 3·67  | 3·24  | ·32   | 2·92  | 2·27  | 1·53  | 1·95  |
| February . . . | 1·45  | 1·28  | ·80   | 1·47  | ·80   | 2·63  | 1·11  | ·29   | 1·43  | 1·61  |
| March . . .    | 1·15  | 4·12  | ·50   | 2·71  | ·38   | 1·79  | 1·13  | 2·12  | 1·34  | 1·56  |
| April . . .    | 3·15  | 1·79  | ·84   | 2·70  | ·09   | ·44   | 3·72  | 1·97  | 2·92  | 2·67  |
| May . . .      | 2·63  | 1·06  | 2·47  | 1·70  | 2·74  | 2·71  | 3·35  | ·85   | 1·55  | 1·98  |
| June . . .     | 1·67  | 1·48  | 4·31  | 3·01  | 2·08  | ·87   | 1·49  | 1·43  | 1·15  | ·96   |
| July . . .     | 1·95  | 2·25  | 1·70  | 2·46  | ·42   | 3·09  | 1·10  | 1·17  | 3·06  | 3·42  |
| August . . .   | 3·19  | 1·66  | 3·29  | 3·03  | 1·24  | ·66   | 3·52  | 1·81  | 1·64  | 1·29  |
| September . .  | 3·56  | ·15   | 7·21  | 2·39  | 1·31  | 2·72  | 3·82  | 3·59  | 2·08  | 4·06  |
| October . . .  | 2·32  | 4·67  | 5·99  | 6·72  | 4·28  | 6·23  | 3·47  | 5·87  | 2·29  | 5·60  |
| November . . . | 4·05  | 1·28  | 7·42  | 1·31  | 1·91  | 1·00  | ·84   | 3·34  | 2·14  | 4·87  |
| December . . . | 2·28  | ·74   | 3·80  | ·58   | 1·49  | 1·35  | 3·07  | ·94   | 3·59  | 4·18  |
|                | 29·02 | 23·79 | 42·05 | 31·75 | 19·98 | 23·81 | 29·54 | 25·65 | 24·72 | 34·15 |



TABLE XXIII.—RAINFALL. VENTNOR, ISLE OF WIGHT.

*Diameter of Gauge, 12 inches. Height above Ground, 3 feet. Height above Sea Level, 150 feet.*

|                | 1860  | 1861  | 1862  | 1863  | 1864  | 1865  | 1866  | 1867  | 1868  | 1869  |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| January . . .  | 3'66  | '38   | 2'26  | 4'19  | 1'79  | 5'74  | 4'56  | 2'80  | 3'68  | 2'72  |
| February . . . | '90   | 2'01  | '62   | '88   | 1'55  | 2'48  | 4'18  | 2'80  | '62   | 2'20  |
| March . . .    | 3'08  | 2'51  | 4'41  | 1'05  | 4'26  | 1'29  | 2'24  | 3'50  | '79   | 3'16  |
| April . . .    | 1'94  | '45   | 1'65  | '62   | 1'34  | '59   | 2'17  | 1'82  | 2'69  | 1'12  |
| May . . .      | 3'54  | 2'05  | 3'01  | 1'79  | 1'31  | 1'86  | '89   | 1'91  | 1'04  | 4'03  |
| June . . .     | 4'77  | 2'90  | 1'53  | 3'15  | 1'20  | 2'30  | 1'69  | 1'08  | '40   | 2'11  |
| July . . .     | 2'10  | 2'71  | 1'81  | '70   | '38   | 1'36  | '81   | 2'64  | '65   | '93   |
| August . . .   | 3'06  | '66   | 1'35  | 2'12  | '82   | 2'44  | 2'88  | 2'51  | 4'33  | '76   |
| September . .  | 4'01  | 3'27  | 1'74  | 3'62  | 2'41  | '14   | 7'15  | 1'67  | 2'45  | 4'29  |
| October . . .  | 2'42  | 1'89  | 6'87  | 3'30  | 1'17  | 8'84  | 1'90  | 4'37  | 3'38  | 1'77  |
| November . . . | 3'05  | 7'10  | 1'36  | 3'07  | 4'49  | 3'18  | 1'88  | 1'62  | 1'07  | 1'62  |
| December . . . | 3'65  | 1'36  | 3'32  | 3'07  | 1'15  | 2'51  | 2'69  | 1'10  | 6'15  | 3'23  |
|                | 36'18 | 27'29 | 29'93 | 27'56 | 21'87 | 32'73 | 33'04 | 27'82 | 27'25 | 27'94 |

|                | 1870  | 1871  | 1872  | 1873  | 1874  | 1875  | 1876  | 1877  | 1878  | 1879  |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| January . . .  | 1'44  | 3'27  | 5'43  | 3'90  | 2'23  | 5'61  | '68   | 6'83  | 2'08  | 4'41  |
| February . . . | 1'77  | 1'33  | 1'85  | 3'01  | 1'30  | 2'98  | 3'56  | 2'06  | 2'16  | 3'92  |
| March . . .    | 1'45  | '76   | 3'08  | 2'08  | '72   | '84   | 3'64  | 2'18  | 2'47  | '84   |
| April . . .    | '30   | 3'36  | '97   | '85   | 2'10  | 1'35  | 1'62  | 2'44  | 2'63  | 3'88  |
| May . . .      | '95   | '07   | 2'67  | 1'08  | '56   | '91   | '32   | 1'99  | 2'86  | 2'17  |
| June . . .     | '23   | 2'57  | 2'17  | 2'32  | 2'17  | 2'20  | '93   | '67   | '85   | 4'35  |
| July . . .     | 2'20  | 4'18  | 4'19  | 1'83  | '52   | 3'35  | 1'00  | 2'45  | 3'74  | 3'59  |
| August . . .   | 1'73  | 1'38  | 1'09  | 1'75  | 1'32  | 1'62  | 4'17  | 2'62  | 6'04  | 5'19  |
| September . .  | 1'23  | 4'96  | 1'46  | 2'65  | 3'70  | 1'91  | 4'62  | 1'86  | 2'19  | 3'52  |
| October . . .  | 4'19  | 1'70  | 5'27  | 4'83  | 4'57  | 5'37  | 1'60  | 3'09  | 3'18  | 1'23  |
| November . . . | 2'39  | '47   | 5'31  | 2'74  | 3'06  | 5'71  | 4'18  | 8'99  | 4'11  | '88   |
| December . . . | 2'72  | '86   | 5'73  | '96   | 2'54  | '86   | 7'67  | 2'25  | 2'10  | 1'00  |
|                | 20'60 | 24'91 | 39'22 | 28'00 | 24'79 | 32'71 | 33'99 | 37'43 | 34'41 | 34'98 |

TABLE XXIV.

*Showing the Rainfall from January 1840 to December 1879, a Period of Forty Years, in their several Decades.*

|      |        |      |        |      |        |      |        |
|------|--------|------|--------|------|--------|------|--------|
| 1840 | 20'50  | 1850 | 29'02  | 1860 | 36'18  | 1870 | 20'60  |
| 1841 | 26'68  | 1851 | 23'79  | 1861 | 27'29  | 1871 | 24'91  |
| 1842 | 18'97  | 1852 | 42'05  | 1862 | 29'93  | 1872 | 39'22  |
| 1843 | 26'94  | 1853 | 31'75  | 1863 | 27'56  | 1873 | 28'00  |
| 1844 | 23'38  | 1854 | 19'98  | 1864 | 21'87  | 1874 | 24'79  |
| 1845 | 21'49  | 1855 | 23'81  | 1865 | 32'73  | 1875 | 32'71  |
| 1846 | 30'48  | 1856 | 29'54  | 1866 | 33'04  | 1876 | 33'99  |
| 1847 | 20'65  | 1857 | 25'65  | 1867 | 27'82  | 1877 | 37'43  |
| 1848 | 39'38  | 1858 | 24'72  | 1868 | 27'25  | 1878 | 34'41  |
| 1849 | 28'75  | 1859 | 34'15  | 1869 | 27'94  | 1879 | 34'98  |
|      | 25'722 |      | 28'446 |      | 29'161 |      | 31'109 |

*Showing Years in which the Rainfall exceeded 30 Inches.*

|      |       |      |       |      |       |      |       |
|------|-------|------|-------|------|-------|------|-------|
| 1846 | 30'48 | 1852 | 42'05 | 1860 | 36'18 | 1872 | 39'22 |
| 1848 | 39'38 | 1853 | 31'75 | 1865 | 32'73 | 1875 | 32'71 |
|      |       | 1859 | 34'15 | 1866 | 33'04 | 1876 | 33'99 |
|      |       |      |       |      |       | 1877 | 37'43 |
|      |       |      |       |      |       | 1878 | 34'41 |
|      |       |      |       |      |       | 1879 | 34'98 |

*Showing Years in which the Rainfall was under 25 Inches.*

|      |       |      |       |      |       |      |       |
|------|-------|------|-------|------|-------|------|-------|
| 1840 | 20'50 | 1851 | 23'79 | 1864 | 21'87 | 1870 | 20'60 |
| 1842 | 18'97 | 1854 | 19'98 |      |       | 1871 | 24'91 |
| 1844 | 23'38 | 1855 | 23'81 |      |       | 1874 | 24'79 |
| 1845 | 21'49 | 1858 | 27'72 |      |       |      |       |
| 1847 | 20'65 |      |       |      |       |      |       |

In the years 1842 and 1854 the rainfall was below 20 inches.



TABLE XXV.—MEAN PRESSURE OF ATMOSPHERE.

|            | 1840 | 1841  | 1842  | 1843  | 1844  | 1845  | 1846  | 1847  | 1848  | 1849  |
|------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| January .  | —    | 29·66 | 29·82 | 29·76 | 29·97 | 29·75 | 29·98 | 29·77 | 29·83 | 29·87 |
| February . | —    | 29·62 | 29·89 | 29·52 | 29·56 | 29·87 | 29·95 | 29·85 | 29·64 | 30·18 |
| March .    | —    | 29·80 | 29·71 | 29·81 | 29·77 | 29·90 | 29·76 | 29·91 | 29·56 | 30·01 |
| April .    | —    | 29·71 | 29·86 | 29·77 | 30·08 | 29·76 | 29·64 | 29·74 | 29·67 | 29·58 |
| May .      | —    | 29·73 | 29·77 | 29·71 | 30·00 | 29·80 | 29·86 | 29·84 | 29·99 | 29·84 |
| June .     | —    | 29·76 | 29·93 | 29·78 | 29·91 | 29·89 | 29·95 | 29·90 | 29·75 | 29·94 |
| July .     | —    | 29·77 | 29·87 | 29·93 | 29·86 | 29·87 | 29·90 | 30·01 | 29·94 | 29·91 |
| August .   | —    | 29·83 | 29·92 | 29·95 | 29·80 | 29·84 | 29·89 | 29·97 | 29·83 | 29·95 |
| September  | —    | 29·69 | 29·73 | 30·11 | 29·95 | 29·86 | 29·91 | 29·93 | 29·92 | 29·17 |
| October .  | —    | 29·51 | 29·86 | 29·76 | 29·66 | 29·95 | 29·63 | 29·89 | 29·74 | 29·82 |
| November   | —    | 29·71 | 29·58 | 29·82 | 29·74 | 29·67 | 29·88 | 29·93 | 29·89 | 29·81 |
| December   | —    | 29·68 | 29·99 | 30·30 | 29·89 | 29·80 | 29·79 | 29·77 | 29·87 | 29·88 |

|            | 1850   | 1851   | 1852   | 1853   | 1854   | 1855   | 1856   | 1857   | 1858   | 1859   |
|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| January .  | 29·915 | 26·752 | 29·737 | 29·612 | 29·680 | 30·042 | 29·539 | 29·703 | 30·247 | 30·136 |
| February . | 29·967 | 29·971 | 29·992 | 29·522 | 30·150 | 29·569 | 29·943 | 29·985 | 29·849 | 29·950 |
| March .    | 30·109 | 29·714 | 30·063 | 29·784 | 30·265 | 29·591 | 30·045 | 29·971 | 29·841 | 29·911 |
| April .    | 29·688 | 29·799 | 30·011 | 29·761 | 30·124 | 29·983 | 29·641 | 29·687 | 29·824 | 29·650 |
| May .      | 29·780 | 29·922 | 29·866 | 29·765 | 29·769 | 29·698 | 29·694 | 29·837 | 29·818 | 29·802 |
| June .     | 30·045 | 30·011 | 29·654 | 29·784 | 29·837 | 29·947 | 29·939 | 29·916 | 29·820 | 29·804 |
| July .     | 29·921 | 29·834 | 29·902 | 29·840 | 29·887 | 29·834 | 29·938 | 29·964 | 29·889 | 30·073 |
| August .   | 29·913 | 30·019 | 29·697 | 29·824 | 30·014 | 29·979 | 29·850 | 29·928 | 29·947 | 29·941 |
| September  | 30·034 | 30·117 | 29·776 | 29·939 | 30·120 | 30·048 | 29·741 | 29·865 | 30·005 | 29·783 |
| October .  | 29·799 | 29·850 | 29·743 | 29·616 | 29·799 | 29·587 | 30·043 | 29·764 | 29·942 | 29·548 |
| November   | 29·852 | 29·880 | 29·444 | 29·985 | 29·755 | 29·894 | 29·974 | 29·986 | 29·780 | 29·880 |
| December   | 29·997 | 30·212 | 29·634 | 29·765 | 29·887 | 29·785 | 29·613 | 30·257 | 29·838 | 29·670 |



TABLE XXVI.—MEAN PRESSURE OF ATMOSPHERE.

|            | 1860   | 1861   | 1862   | 1863   | 1864   | 1865   | 1866   | 1867   | 1868   | 1869   |
|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| January .  | 29'538 | 30'019 | 29'765 | 29'695 | 30'085 | 29'405 | 29'753 | 29'574 | 29'819 | 30'607 |
| February . | 29'891 | 29'721 | 29'838 | 30'225 | 29'827 | 29'750 | 29'597 | 30'032 | 30'033 | 29'926 |
| March .    | 29'675 | 29'734 | 29'558 | 29'803 | 29'571 | 29'755 | 29'551 | 29'655 | 29'927 | 29'846 |
| April .    | 29'783 | 29'846 | 29'918 | 29'918 | 29'981 | 30'000 | 29'770 | 29'778 | 29'878 | 29'903 |
| May .      | 29'778 | 29'954 | 29'791 | 29'933 | 29'922 | 29'830 | 29'830 | 30'525 | 30'574 | 29'698 |
| June .     | 29'663 | 29'835 | 29'808 | 29'832 | 29'891 | 30'093 | 29'843 | 29'969 | 30'097 | 30'011 |
| July .     | 29'940 | 29'696 | 29'858 | 30'070 | 29'919 | 29'900 | 29'828 | 29'837 | 30'002 | 30'020 |
| August .   | 29'668 | 29'986 | 29'879 | 29'862 | 29'986 | 29'793 | 29'714 | 29'942 | 29'816 | 30'076 |
| September  | 29'643 | 29'819 | 29'918 | 29'801 | 29'852 | 30'138 | 29'653 | 30'031 | 29'780 | 29'775 |
| October .  | 29'940 | 29'930 | 29'862 | 29'720 | 29'703 | 29'526 | 30'095 | 29'847 | 29'905 | 30'003 |
| November   | 29'693 | 29'651 | 29'939 | 29'985 | 29'658 | 29'773 | 29'864 | 30'177 | 29'906 | 29'880 |
| December   | 29'440 | 30'041 | 29'925 | 30'050 | 29'876 | 30'095 | 29'860 | 29'929 | 29'565 | 29'687 |

|            | 1870   | 1871   | 1872   | 1873   | 1874   | 1875   | 1876   | 1877   | 1878   | 1879   |
|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| January .  | 29'869 | 29'695 | 29'524 | 29'638 | 29'967 | 29'832 | 30'199 | 29'743 | 30'056 | 29'870 |
| February . | 29'728 | 29'891 | 29'693 | 29'933 | 29'897 | 29'933 | 29'737 | 29'865 | 30'191 | 29'433 |
| March .    | 29'912 | 29'945 | 29'706 | 29'662 | 30'107 | 30'015 | 29'420 | 29'663 | 29'960 | 29'883 |
| April .    | 30'076 | 29'718 | 29'805 | 29'888 | 29'766 | 29'933 | 29'756 | 29'640 | 29'713 | 29'574 |
| May .      | 29'977 | 30'009 | 29'823 | 29'909 | 29'830 | 29'947 | 30'092 | 29'779 | 29'711 | 29'921 |
| June .     | 30'064 | 29'844 | 29'838 | 29'882 | 30'008 | 29'849 | 29'917 | 29'904 | 29'872 | 29'764 |
| July .     | 29'926 | 29'804 | 29'863 | 29'904 | 29'928 | 29'888 | 30'035 | 29'879 | 29'975 | 29'761 |
| August .   | 29'913 | 29'954 | 29'915 | 29'878 | 29'895 | 29'982 | 29'927 | 29'826 | 29'698 | 29'789 |
| September  | 30'004 | 29'794 | 29'808 | 29'876 | 29'874 | 29'633 | 29'927 | 29'990 | 29'951 | 29'940 |
| October .  | 29'708 | 29'889 | 29'603 | 29'811 | 29'784 | 29'586 | 29'833 | 29'970 | 29'729 | 30'062 |
| November   | 29'702 | 29'849 | 29'608 | 29'750 | 29'850 | 29'691 | 29'772 | 29'637 | 29'652 | 30'123 |
| December   | 29'786 | 29'988 | 29'484 | 30'180 | 29'652 | 30'023 | 29'385 | 29'947 | 29'624 | 30'229 |



TABLE XXVII.—PREVAILING WINDS.

|          | N.  | N.E. | E.  | S.E. | S.  | S.W. | W.  | N.W. |
|----------|-----|------|-----|------|-----|------|-----|------|
| 1840 . . | 30  | 41   | 68  | 12   | 18  | 92   | 64  | 41   |
| 1841 . . | 18  | 31   | 34  | 37   | 39  | 125  | 47  | 34   |
| 1842 . . | 20  | 50   | 73  | 21   | 31  | 81   | 56  | 33   |
| 1843 . . | 20  | 48   | 76  | 9    | 25  | 68   | 84  | 35   |
| 1844 . . | 14  | 79   | 71  | 11   | 14  | 83   | 48  | 46   |
| 1845 . . | 34  | 63   | 54  | 14   | 22  | 88   | 54  | 36   |
| 1846 . . | 32  | 52   | 66  | 19   | 19  | 131  | 25  | 21   |
| 1847 . . | 29  | 56   | 62  | 22   | 18  | 97   | 56  | 25   |
| 1848 . . | 30  | 58   | 47  | 18   | 46  | 101  | 48  | 18   |
| 1849 . . | 45  | 27   | 66  | 15   | 27  | 32   | 107 | 47   |
|          | 272 | 505  | 617 | 178  | 259 | 898  | 589 | 336  |

|          | N.  | N.E. | E.  | S.E. | S.  | S.W. | W.  | N.W. |
|----------|-----|------|-----|------|-----|------|-----|------|
| 1850 . . | 34  | 27   | 47  | 27   | 21  | 68   | 87  | 64   |
| 1851 . . | 39  | 23   | 46  | 30   | 29  | 49   | 87  | 62   |
| 1852 . . | 24  | 23   | 64  | 31   | 43  | 58   | 83  | 40   |
| 1853 . . | 37  | 38   | 53  | 30   | 34  | 33   | 97  | 43   |
| 1854 . . | 42  | 30   | 75  | 17   | 27  | 42   | 83  | 50   |
| 1855 . . | 50  | 38   | 76  | 19   | 31  | 23   | 96  | 32   |
| 1856 . . | 42  | 30   | 75  | 17   | 27  | 42   | 83  | 50   |
| 1857 . . | 31  | 11   | 76  | 24   | 42  | 55   | 96  | 30   |
| 1858 . . | 25  | 38   | 84  | 14   | 33  | 55   | 83  | 33   |
| 1859 . . | 28  | 32   | 60  | 11   | 34  | 81   | 90  | 29   |
|          | 352 | 290  | 656 | 220  | 321 | 506  | 885 | 433  |

TABLE XXVIII.—PREVAILING WINDS.

|                       | N.  | N.E. | E.  | S.E. | S.  | S.W. | W.    | N.W. |
|-----------------------|-----|------|-----|------|-----|------|-------|------|
| 1860 . .              | 41  | 26   | 55  | 14   | 39  | 62   | 105   | 24   |
| 1861 . .              | 23  | 11   | 76  | 20   | 39  | 82   | 91    | 23   |
| 1862 . .              | 22  | 25   | 60  | 22   | 29  | 95   | 86    | 26   |
| 1863 . .              | 25  | 11   | 52  | 20   | 36  | 83   | 97    | 41   |
| 1864 . .              | 26  | 25   | 101 | 15   | 20  | 54   | 91    | 34   |
| 1865 . .              | 38  | 25   | 94  | 16   | 27  | 37   | 94    | 34   |
| 1866 . .              | 13  | 14   | 60  | 20   | 16  | 47   | 130   | 34   |
| 1867 <sup>1</sup> . . | 20  | 16   | 59  | 20   | 4   | 40   | 107   | 32   |
| 1868 . .              | 12  | 29   | 63  | 26   | 13  | 68   | 103   | 52   |
| 1869 <sup>2</sup> . . | 15  | 27   | 58  | 36   | 16  | 45   | 118   | 49   |
|                       | 235 | 209  | 698 | 209  | 239 | 613  | 1,022 | 349  |

|                       | N.  | N.E. | E.  | S.E. | S.  | S.W. | W.  | N.W. |
|-----------------------|-----|------|-----|------|-----|------|-----|------|
| 1870 . .              | 26  | 34   | 75  | 27   | 6   | 48   | 93  | 56   |
| 1871 . .              | 18  | 44   | 61  | 44   | 9   | 63   | 71  | 55   |
| 1872 . .              | 13  | 36   | 24  | 28   | 21  | 107  | 77  | 59   |
| 1873 . .              | 15  | 59   | 48  | 23   | 7   | 46   | 109 | 58   |
| 1874 . .              | 27  | 44   | 36  | 22   | 6   | 66   | 60  | 104  |
| 1875 . .              | 12  | 78   | 42  | 39   | 27  | 55   | 37  | 75   |
| 1876 <sup>3</sup> . . | 17  | 50   | 49  | 30   | 10  | 55   | 61  | 65   |
| 1877 . .              | 45  | 24   | 38  | 13   | 26  | 72   | 99  | 48   |
| 1878 . .              | 73  | 20   | 71  | 9    | 23  | 25   | 107 | 37   |
| 1879 . .              | 50  | 34   | 76  | 19   | 17  | 31   | 106 | 32   |
|                       | 296 | 423  | 520 | 254  | 152 | 568  | 825 | 589  |

<sup>1</sup> The winds for January and July not recorded, as also the observations for May 15, 16, 17, and 18.<sup>2</sup> The observations for August 7 omitted.<sup>3</sup> Observations for February of 1876 not recorded.



TABLE XXIX.—PREVAILING WINDS FROM 1840 TO 1879.  
*A Period of Forty Years.*

|                  | N.    | N.E.  | E.    | S.E. | S.  | S.W.  | W.    | N.W.  |
|------------------|-------|-------|-------|------|-----|-------|-------|-------|
| 1840 to 1849 . . | 272   | 505   | 617   | 178  | 259 | 898   | 589   | 336   |
| 1850 to 1859 . . | 352   | 290   | 656   | 220  | 321 | 506   | 885   | 433   |
| 1860 to 1869 . . | 235   | 209   | 698   | 209  | 239 | 613   | 1,022 | 349   |
| 1870 to 1879 . . | 296   | 423   | 520   | 254  | 152 | 568   | 825   | 589   |
|                  | 1,155 | 1,427 | 2,491 | 861  | 971 | 2,585 | 3,321 | 1,707 |

|      |     |       |      |     |       |
|------|-----|-------|------|-----|-------|
| N.   | . . | 1,155 | S.   | . . | 971   |
| N.E. | . . | 1,427 | S.W. | . . | 2,585 |
| E.   | . . | 2,491 | W.   | . . | 3,321 |
| S.E. | . . | 861   | N.W. | . . | 1,707 |
|      |     | <hr/> |      |     | <hr/> |
|      |     | 5,934 |      |     | 8,584 |

Northerly and easterly winds as compared with southerly and westerly winds are 5,934 to 8,584 during a period of forty years.

TABLE XXX.—HYGROMETER.

The following hygrometrical observations, extending over fifteen consecutive years, have been selected from their having been carefully recorded by the late Dr. Martin himself, the dew point being calculated from Mr. Glaisher's tables.

| 1850        |                |                   |                  |                                                                       | 1851           |                   |                  |                                                                       |
|-------------|----------------|-------------------|------------------|-----------------------------------------------------------------------|----------------|-------------------|------------------|-----------------------------------------------------------------------|
|             | Mean Dew Point | Highest Dew Point | Lowest Dew Point | Mean Evaporation, calculated from Mean Temperature and Mean Dew Point | Mean Dew Point | Highest Dew Point | Lowest Dew Point | Mean Evaporation, calculated from Mean Temperature and Mean Dew Point |
| January .   | 32'22          | 48'00             | 22'00            | 5'45                                                                  | 43'51          | 49'00             | 35'00            | 3'23                                                                  |
| February .  | 40'56          | 49'00             | 29'00            | 5'38                                                                  | 38'51          | 46'00             | 29'00            | 5'68                                                                  |
| March .     | 34'56          | 48'00             | 21'00            | 8'69                                                                  | 40'39          | 49'00             | 28'00            | 5'78                                                                  |
| April .     | 48'85          | 51'00             | 39'00            | 3'64                                                                  | 42'75          | 51'00             | 31'00            | 5'13                                                                  |
| May .       | 46'09          | 63'00             | 30'00            | 6'93                                                                  | 48'61          | 57'00             | 37'00            | 4'15                                                                  |
| June .      | 55'08          | 63'00             | 44'00            | 5'63                                                                  | 54'36          | 66'00             | 41'00            | 5'57                                                                  |
| July .      | 58'11          | 66'00             | 49'00            | 4'03                                                                  | 56'19          | 64'00             | 50'00            | 5'42                                                                  |
| August .    | 55'01          | 64'00             | 45'00            | 6'48                                                                  | 57'60          | 63'00             | 46'00            | 5'81                                                                  |
| September . | 52'99          | 63'00             | 46'00            | 5'71                                                                  | 51'44          | 65'00             | 42'00            | 8'75                                                                  |
| October .   | 44'56          | 56'00             | 35'00            | 5'30                                                                  | 51'89          | 59'00             | 38'00            | 3'62                                                                  |
| November .  | 45'85          | 56'00             | 26'00            | 3'68                                                                  | 36'96          | 47'00             | 24'00            | 5'49                                                                  |
| December .  | 39'70          | 49'00             | 30'00            | 5'60                                                                  | 39'35          | 51'00             | 28'00            | 4'69                                                                  |

| 1852        |                |                   |                  |                                                                       | 1853           |                   |                  |                                                                       |
|-------------|----------------|-------------------|------------------|-----------------------------------------------------------------------|----------------|-------------------|------------------|-----------------------------------------------------------------------|
|             | Mean Dew Point | Highest Dew Point | Lowest Dew Point | Mean Evaporation, calculated from Mean Temperature and Mean Dew Point | Mean Dew Point | Highest Dew Point | Lowest Dew Point | Mean Evaporation, calculated from Mean Temperature and Mean Dew Point |
| January .   | 41'30          | 50'00             | 28'00            | 4'38                                                                  | 41'35          | 51'00             | 30'00            | 4'27                                                                  |
| February .  | 37'85          | 49'00             | 24'00            | 5'70                                                                  | 32'35          | 39'00             | 25'00            | 4'38                                                                  |
| March .     | 36'78          | 49'00             | 26'00            | 7'91                                                                  | 35'20          | 47'00             | 23'00            | 6'35                                                                  |
| April .     | 40'43          | 49'00             | 30'00            | 7'83                                                                  | 44'45          | 50'00             | 36'00            | 3'91                                                                  |
| May .       | 47'16          | 56'00             | 35'00            | 5'77                                                                  | 48'92          | 57'00             | 36'00            | 5'32                                                                  |
| June .      | 52'79          | 57'00             | 47'00            | 4'19                                                                  | 53'80          | 61'00             | 45'00            | 4'03                                                                  |
| July .      | 60'53          | 67'00             | 53'00            | 6'64                                                                  | 56'61          | 67'00             | 52'00            | 3'38                                                                  |
| August .    | 59'25          | 65'00             | 56'00            | 4'05                                                                  | 56'45          | 61'00             | 50'00            | 4'25                                                                  |
| September . | 56'25          | 65'00             | 45'00            | 3'61                                                                  | 54'02          | 60'00             | 44'00            | 3'51                                                                  |
| October .   | 47'40          | 57'00             | 39'00            | 4'46                                                                  | 51'44          | 57'00             | 40'00            | 2'73                                                                  |
| November .  | 49'73          | 58'00             | 31'00            | 2'16                                                                  | 42'79          | 53'00             | 32'00            | 4'74                                                                  |
| December .  | 47'77          | 52'00             | 36'00            | 2'16                                                                  | 33'37          | 46'00             | 18'00            | 5'41                                                                  |



TABLE XXXI.—HYGROMETER.

| 1854        |                      |                         |                        |                                                                                         | 1855                 |                         |                        |                                                                                         |
|-------------|----------------------|-------------------------|------------------------|-----------------------------------------------------------------------------------------|----------------------|-------------------------|------------------------|-----------------------------------------------------------------------------------------|
|             | Mean<br>Dew<br>Point | Highest<br>Dew<br>Point | Lowest<br>Dew<br>Point | Mean<br>Evaporation,<br>calculated<br>from Mean<br>Temperature<br>and Mean<br>Dew Point | Mean<br>Dew<br>Point | Highest<br>Dew<br>Point | Lowest<br>Dew<br>Point | Mean<br>Evaporation,<br>calculated<br>from Mean<br>Temperature<br>and Mean<br>Dew Point |
| January .   | 38'59                | 47'00                   | 20'00                  | 3'48                                                                                    | 33'48                | 47'00                   | 22'00                  | 5'19                                                                                    |
| February .  | 36'72                | 47'00                   | 25'00                  | 6'29                                                                                    | 28'18                | 44'00                   | 14'00                  | 5'58                                                                                    |
| March .     | 40'19                | 47'00                   | 31'00                  | 5'90                                                                                    | 34'89                | 43'00                   | 21'00                  | 6'17                                                                                    |
| April .     | 42'61                | 52'00                   | 23'00                  | 8'62                                                                                    | 40'61                | 52'00                   | 29'00                  | 7'00                                                                                    |
| May .       | 47'75                | 53'00                   | 40'00                  | 4'52                                                                                    | 44'06                | 61'00                   | 25'00                  | 5'69                                                                                    |
| June .      | 51'71                | 59'00                   | 42'00                  | 4'94                                                                                    | 50'31                | 64'00                   | 41'00                  | 6'24                                                                                    |
| July .      | 56'15                | 67'00                   | 51'00                  | 5'81                                                                                    | 58'48                | 64'00                   | 55'00                  | 3'03                                                                                    |
| August .    | 57'88                | 66'00                   | 50'00                  | 5'05                                                                                    | 59'61                | 63'00                   | 55'00                  | 3'16                                                                                    |
| September . | 54'96                | 61'00                   | 44'00                  | 7'03                                                                                    | 56'53                | 61'00                   | 48'00                  | 4'00                                                                                    |
| October .   | 49'90                | 61'00                   | 37'00                  | 3'71                                                                                    | 51'51                | 59'00                   | 42'00                  | 3'06                                                                                    |
| November .  | 40'08                | 53'00                   | 30'00                  | 4'62                                                                                    | 40'36                | 52'00                   | 30'00                  | 4'27                                                                                    |
| December .  | 40'05                | 50'00                   | 27'00                  | 4'81                                                                                    | 35'45                | 45'00                   | 23'00                  | 4'92                                                                                    |

| 1856        |                      |                         |                        |                                                                                         | 1857                 |                         |                        |                                                                                         |
|-------------|----------------------|-------------------------|------------------------|-----------------------------------------------------------------------------------------|----------------------|-------------------------|------------------------|-----------------------------------------------------------------------------------------|
|             | Mean<br>Dew<br>Point | Highest<br>Dew<br>Point | Lowest<br>Dew<br>Point | Mean<br>Evaporation,<br>calculated<br>from Mean<br>Temperature<br>and Mean<br>Dew Point | Mean<br>Dew<br>Point | Highest<br>Dew<br>Point | Lowest<br>Dew<br>Point | Mean<br>Evaporation,<br>calculated<br>from Mean<br>Temperature<br>and Mean<br>Dew Point |
| January .   | 38'50                | 47'00                   | 21'00                  | 4'06                                                                                    | 33'25                | 46'00                   | 17'00                  | 6'74                                                                                    |
| February .  | 37'92                | 46'00                   | 24'00                  | 5'99                                                                                    | 39'35                | 46'00                   | 24'00                  | 3'81                                                                                    |
| March .     | 35'77                | 45'00                   | 27'00                  | 7'32                                                                                    | 39'89                | 49'00                   | 25'00                  | 4'85                                                                                    |
| April .     | 43'10                | 51'00                   | 34'00                  | 5'58                                                                                    | 42'79                | 52'00                   | 30'00                  | 4'99                                                                                    |
| May .       | 46'83                | 53'00                   | 35'00                  | 4'21                                                                                    | 49'40                | 56'00                   | 36'00                  | 4'79                                                                                    |
| June .      | 53'50                | 62'00                   | 46'00                  | 5'24                                                                                    | 55'61                | 66'00                   | 48'00                  | 6'47                                                                                    |
| July .      | 57'03                | 64'00                   | 48'00                  | 3'64                                                                                    | 59'15                | 65'00                   | 50'00                  | 4'66                                                                                    |
| August .    | 60'45                | 68'00                   | 53'00                  | 4'00                                                                                    | 61'05                | 67'00                   | 53'00                  | 5'28                                                                                    |
| September . | 53'43                | 60'00                   | 42'00                  | 4'60                                                                                    | 58'65                | 65'00                   | 49'00                  | 4'33                                                                                    |
| October .   | 51'58                | 58'00                   | 42'00                  | 4'60                                                                                    | 53'32                | 60'00                   | 44'00                  | 4'08                                                                                    |
| November .  | 40'17                | 48'00                   | 15'00                  | 5'14                                                                                    | 47'06                | 58'00                   | 36'00                  | 3'80                                                                                    |
| December .  | 38'63                | 50'00                   | 17'00                  | 5'37                                                                                    | 45'35                | 54'00                   | 33'00                  | 3'88                                                                                    |



TABLE XXXII.—HYGROMETER.

| 1858        |                      |                         |                        |                                                                                         | 1859                 |                         |                        |                                                                                         |
|-------------|----------------------|-------------------------|------------------------|-----------------------------------------------------------------------------------------|----------------------|-------------------------|------------------------|-----------------------------------------------------------------------------------------|
|             | Mean<br>Dew<br>Point | Highest<br>Dew<br>Point | Lowest<br>Dew<br>Point | Mean<br>Evaporation,<br>calculated<br>from Mean<br>Temperature<br>and Mean<br>Dew Point | Mean<br>Dew<br>Point | Highest<br>Dew<br>Point | Lowest<br>Dew<br>Point | Mean<br>Evaporation,<br>calculated<br>from Mean<br>Temperature<br>and Mean<br>Dew Point |
| January .   | 37'62                | 49'00                   | 22'00                  | 5'31                                                                                    | 39'32                | 48'00                   | 27'00                  | 4'22                                                                                    |
| February .  | 34'78                | 46'00                   | 21'00                  | 5'78                                                                                    | 40'47                | 47'00                   | 26'00                  | 5'29                                                                                    |
| March .     | 38'58                | 49'00                   | 25'00                  | 5'56                                                                                    | 41'28                | 49'00                   | 26'00                  | 6'44                                                                                    |
| April .     | 43'76                | 53'00                   | 31'00                  | 6'02                                                                                    | 42'60                | 55'00                   | 29'00                  | 5'98                                                                                    |
| May .       | 48'66                | 58'00                   | 37'00                  | 4'08                                                                                    | 49'00                | 57'00                   | 39'00                  | 4'91                                                                                    |
| June .      | 57'10                | 71'00                   | 48'00                  | 6'43                                                                                    | 57'15                | 62'00                   | 52'00                  | 4'14                                                                                    |
| July .      | 55'83                | 65'00                   | 46'00                  | 5'03                                                                                    | 61'63                | 67'00                   | 53'00                  | 5'86                                                                                    |
| August .    | 58'67                | 66'00                   | 51'00                  | 4'23                                                                                    | 57'61                | 64'00                   | 53'00                  | 7'45                                                                                    |
| September . | 58'44                | 64'00                   | 54'00                  | 3'92                                                                                    | 52'56                | 61'00                   | 46'00                  | 6'62                                                                                    |
| October .   | 50'62                | 61'00                   | 37'00                  | 3'58                                                                                    | 50'53                | 62'00                   | 30'00                  | 4'70                                                                                    |
| November .  | 38'93                | 51'00                   | 30'00                  | 5'46                                                                                    | 42'38                | 52'00                   | 31'00                  | 5'43                                                                                    |
| December .  | 40'60                | 50'00                   | 30'00                  | 3'96                                                                                    | 37'60                | 51'00                   | 26'00                  | 3'25                                                                                    |

| 1860        |                      |                         |                        |                                                                                         | 1861                 |                         |                        |                                                                                         |
|-------------|----------------------|-------------------------|------------------------|-----------------------------------------------------------------------------------------|----------------------|-------------------------|------------------------|-----------------------------------------------------------------------------------------|
|             | Mean<br>Dew<br>Point | Highest<br>Dew<br>Point | Lowest<br>Dew<br>Point | Mean<br>Evaporation,<br>calculated<br>from Mean<br>Temperature<br>and Mean<br>Dew Point | Mean<br>Dew<br>Point | Highest<br>Dew<br>Point | Lowest<br>Dew<br>Point | Mean<br>Evaporation,<br>calculated<br>from Mean<br>Temperature<br>and Mean<br>Dew Point |
| January .   | 38'45                | 48'00                   | 27'00                  | 5'32                                                                                    | 33'05                | 44'00                   | 27'00                  | 5'47                                                                                    |
| February .  | 32'04                | 42'00                   | 22'00                  | 6'76                                                                                    | 36'74                | 44'00                   | 21'00                  | 7'27                                                                                    |
| March .     | 36'74                | 47'00                   | 20'00                  | 6'83                                                                                    | 38'38                | 47'00                   | 32'00                  | 7'90                                                                                    |
| April .     | 36'30                | 45'00                   | 27'00                  | 8'96                                                                                    | 39'54                | 46'00                   | 30'00                  | 9'07                                                                                    |
| May .       | 46'26                | 52'00                   | 33'00                  | 7'88                                                                                    | 44'21                | 59'00                   | 31'00                  | 9'76                                                                                    |
| June .      | 49'80                | 54'00                   | 42'00                  | 5'38                                                                                    | 52'35                | 63'00                   | 44'00                  | 7'26                                                                                    |
| July .      | 52'38                | 60'00                   | 46'00                  | 6'36                                                                                    | 53'19                | 60'00                   | 46'00                  | 7'79                                                                                    |
| August .    | 53'64                | 58'00                   | 49'00                  | 5'05                                                                                    | Not recorded         |                         |                        |                                                                                         |
| September . | 50'43                | 56'00                   | 43'00                  | 4'95                                                                                    | Not recorded         |                         |                        |                                                                                         |
| October .   | 48'19                | 56'00                   | 30'00                  | 5'80                                                                                    | 50'96                | 59'00                   | 40'00                  | 7'11                                                                                    |
| November .  | 37'96                | 44'00                   | 31'00                  | 6'97                                                                                    | 37'30                | 53'00                   | 22'00                  | 7'40                                                                                    |
| December .  | 33'47                | 50'00                   | 27'00                  | 6'62                                                                                    | 36'93                | 50'00                   | 25'00                  | 7'69                                                                                    |



TABLE XXXIII.—HYGROMETER.

| 1862        |                      |                         |                        |                                                                                         | 1863                 |                         |                        |                                                                                         |
|-------------|----------------------|-------------------------|------------------------|-----------------------------------------------------------------------------------------|----------------------|-------------------------|------------------------|-----------------------------------------------------------------------------------------|
|             | Mean<br>Dew<br>Point | Highest<br>Dew<br>Point | Lowest<br>Dew<br>Point | Mean<br>Evaporation,<br>calculated<br>from Mean<br>Temperature<br>and Mean<br>Dew Point | Mean<br>Dew<br>Point | Highest<br>Dew<br>Point | Lowest<br>Dew<br>Point | Mean<br>Evaporation,<br>calculated<br>from Mean<br>Temperature<br>and Mean<br>Dew Point |
| January .   | 35·58                | 47·00                   | 21·00                  | 6·32                                                                                    | 37·12                | 44·00                   | 28·00                  | 6·71                                                                                    |
| February .  | 34·25                | 47·00                   | 15·00                  | 8·23                                                                                    | 38·35                | 44·00                   | 28·00                  | 6·97                                                                                    |
| March .     | 37·38                | 49·00                   | 17·00                  | 7·68                                                                                    | 37·06                | 46·00                   | 29·00                  | 8·93                                                                                    |
| April .     | 40·36                | 49·00                   | 20·00                  | 9·15                                                                                    | 41·40                | 49·00                   | 30·00                  | 9·28                                                                                    |
| May .       | 48·16                | 55·00                   | 42·00                  | 7·30                                                                                    | 45·27                | 55·00                   | 36·00                  | 7·95                                                                                    |
| June .      | 48·73                | 52·00                   | 42·00                  | 8·18                                                                                    | 49·93                | 55·00                   | 44·00                  | 8·03                                                                                    |
| July .      | 52·06                | 56·00                   | 47·00                  | 7·37                                                                                    | 53·20                | 59·00                   | 44·00                  | 8·87                                                                                    |
| August .    | 53·90                | 58·00                   | 50·00                  | 7·01                                                                                    | 56·23                | 62·00                   | 46·00                  | 6·63                                                                                    |
| September . | 53·14                | 60·00                   | 45·00                  | 6·81                                                                                    | 48·93                | 57·00                   | 44·00                  | 7·66                                                                                    |
| October .   | 48·61                | 60·00                   | 36·00                  | 6·70                                                                                    | 47·74                | 54·00                   | 40·00                  | 7·35                                                                                    |
| November .  | 40·50                | 51·00                   | 26·00                  | 6·62                                                                                    | 42·86                | 52·00                   | 34·00                  | 6·58                                                                                    |
| December .  | 39·87                | 48·00                   | 25·00                  | 6·27                                                                                    | 43·70                | 48·00                   | 27·00                  | 3·10                                                                                    |

| 1864        |                   |                      |                     |                                                                                         |
|-------------|-------------------|----------------------|---------------------|-----------------------------------------------------------------------------------------|
|             | Mean<br>Dew Point | Highest<br>Dew Point | Lowest<br>Dew Point | Mean<br>Evaporation,<br>calculated<br>from Mean<br>Temperature<br>and Mean Dew<br>Point |
| January .   | 35·70             | 47·00                | 22·00               | 5·47                                                                                    |
| February .  | 33·37             | 44·00                | 20·00               | 5·60                                                                                    |
| March .     | 36·70             | 44·00                | 26·00               | 8·52                                                                                    |
| April .     | 40·33             | 46·00                | 34·00               | 9·42                                                                                    |
| May .       | 46·64             | 57·00                | 39·00               | 9·68                                                                                    |
| June .      | 49·63             | 57·00                | 37·00               | 8·40                                                                                    |
| July .      | 53·83             | 64·00                | 45·00               | 8·26                                                                                    |
| August .    | 54·50             | 62·00                | 46·00               | 6·27                                                                                    |
| September . | 51·65             | 60·00                | 44·00               | 7·90                                                                                    |
| October .   | 46·80             | 53·00                | 39·00               | 6·82                                                                                    |
| November .  | 39·00             | 49·00                | 26·00               | 7·30                                                                                    |
| December .  | 37·48             | 45·00                | 28·00               | 4·09                                                                                    |

## OZONE, 1870.

*Belgrave House, Ventnor, Isle of Wight.*

OZONE SCALE.—PROFESSOR SCHÖNBEIN.

|      | Jan. | Feb. | March | April | May | June | July | August | Sept. | Oct. | Nov. | Dec. |
|------|------|------|-------|-------|-----|------|------|--------|-------|------|------|------|
| 1    | 8    | 8    | 5     | 5     | 5   | 4    | 4    | 1      | 8     | 5    | 4    | 4    |
| 2    | 2    | 8    | 1     | 7     | 7   | 4    | 4    | 2      | 7     | 3    | 4    | 3    |
| 3    | 8    | 1    | 8     | 6     | 7   | 3    | 5    | 1      | 6     | 4    | 5    | 3    |
| 4    | 3    | 4    | 8     | 3     | 7   | 4    | 2    | 2      | 8     | 2    | 3    | 5    |
| 5    | 5    | 7    | 8     | 3     | 6   | 4    | 1    | 2      | 5     | 4    | 2    | 1    |
| 6    | 9    | 9    | 7     | 3     | 4   | 4    | 3    | 7      | 8     | 1    | 3    | 2    |
| 7    | 8    | 7    | 7     | 3     | 3   | 6    | 2    | 6      | 7     | 7    | 3    | 4    |
| 8    | 9    | 6    | 7     | 3     | 3   | 3    | 3    | 5      | 8     | 6    | 3    | 4    |
| 9    | 7    | 7    | 5     | 7     | 2   | 4    | 4    | 4      | 8     | 4    | 3    | 1    |
| 10   | 7    | 7    | 7     | 7     | 1   | 5    | 2    | 5      | 5     | 6    | 7    | 1    |
| 11   | 8    | 8    | 6     | 4     | 7   | 7    | 3    | 5      | 6     | 7    | 4    | 6    |
| 12   | 7    | 8    | 6     | 5     | 8   | 6    | 3    | 4      | 6     | 9    | 4    | 4    |
| 13   | 8    | 8    | 8     | 7     | 7   | 4    | 2    | 4      | 7     | 7    | 5    | 4    |
| 14   | 8    | 7    | 8     | 6     | 7   | 4    | 3    | 4      | 4     | 3    | 6    | 4    |
| 15   | 6    | 7    | 6     | 1     | 3   | 3    | 4    | 6      | 4     | 8    | 3    | 3    |
| 16   | 7    | 6    | 6     | 5     | 7   | 7    | 4    | 2      | 4     | 8    | 4    | 1    |
| 17   | 3    | 4    | 4     | 3     | 4   | 7    | 6    | 2      | 3     | 5    | 5    | 4    |
| 18   | 3    | 3    | 3     | 4     | 2   | 3    | 2    | 6      | 3     | 8    | 6    | 8    |
| 19   | 7    | 4    | 3     | 1     | 6   | 4    | 5    | 6      | 3     | 8    | 8    | 7    |
| 20   | 7    | 7    | 8     | 6     | 4   | 4    | 3    | 6      | 4     | 7    | 9    | 3    |
| 21   | 7    | 4    | 4     | 7     | 4   | 3    | 3    | 4      | 3     | 6    | 7    | 5    |
| 22   | 7    | 4    | 8     | 6     | 6   | 4    | 3    | 7      | 4     | 8    | 8    | 6    |
| 23   | 7    | 4    | 8     | 7     | 4   | 4    | 3    | 2      | 5     | 8    | 8    | 3    |
| 24   | 6    | 7    | 6     | 6     | 7   | 6    | 4    | 4      | 6     | 6    | 7    | 3    |
| 25   | 4    | 4    | 6     | 7     | 4   | 5    | 4    | 4      | 3     | 3    | 3    | 6    |
| 26   | 6    | 4    | 7     | 7     | 3   | 4    | 5    | 4      | 5     | 4    | 2    | 3    |
| 27   | 3    | 2    | 4     | 7     | 3   | 5    | 5    | 7      | 6     | 7    | 2    | 5    |
| 28   | 4    | 5    | 4     | 3     | 3   | 4    | 4    | 3      | 6     | 7    | 1    | 4    |
| 29   | 5    | —    | 6     | 4     | 4   | 4    | 3    | 4      | 6     | 7    | 5    | 6    |
| 30   | 8    | —    | 4     | 8     | 8   | 3    | 7    | 4      | 4     | 8    | 4    | 6    |
| 31   | 6    | —    | 2     | —     | 7   | —    | 2    | 5      | —     | 7    | —    | 1    |
| Mean | 6·2  | 5·7  | 5·8   | 5     | 4·9 | 4·4  | 3·4  | 4·1    | 5·4   | 5·9  | 4·6  | 3·8  |

The minimum of ozone occurred, for the most part, in calm, fine weather, with northerly and easterly winds; the maximum in stormy and rough weather, with wind from south-west and west blowing up the Channel.



## OZONE, 1871.

|      | Jan. | Feb. | March | April   | May | June | July | August | Sept. | Oct. | Nov. | Dec. |
|------|------|------|-------|---------|-----|------|------|--------|-------|------|------|------|
| 1    | 3    | 1    | 1     | 3       | 7   | 5    | 2    | 3      | 3     | 5    | 4    | 6    |
| 2    | 1    | 1    | 1     | 4       | 1   | 6    | 4    | 2      | 3     | 4    | 3    | 3    |
| 3    | 2    | 1    | 2     | 5       | 4   | 4    | 4    | 3      | 5     | 2    | 4    | 4    |
| 4    | 2    | 1    | 3     | 6       | 4   | 6    | 4    | 2      | 4     | 2    | 4    | 3    |
| 5    | 4    | 7    | 3     | 6       | 8   | 5    | 4    | 2      | 2     | 4    | 3    | 1    |
| 6    | 3    | 2    | 5     | 4       | 5   | 5    | 3    | 3      | 3     | 8    | 1    | 2    |
| 7    | 4    | 6    | 8     | 5       | 4   | 6    | 4    | 2      | 4     | 7    | 1    | 5    |
| 8    | 6    | 6    | 7     | 3       | 4   | 3    | 4    | 2      | 2     | 3    | 3    | 1    |
| 9    | 5    | 7    | 7     | 4       | 6   | 3    | 3    | 2      | 3     | 3    | 3    | 4    |
| 10   | 7    | 7    | 6     | 6       | 4   | 4    | 4    | 1      | 4     | 4    | 5    | 3    |
| 11   | 3    | 7    | 7     | 4       | 4   | 5    | 4    | 2      | 5     | 2    | 3    | 4    |
| 12   | 3    | 7    | 7     | 8       | 3   | 4    | 5    | 2      | 7     | 4    | 4    | 1    |
| 13   | 6    | 3    | 7     | 4       | 3   | 3    | 1    | 6      | 7     | 4    | 4    | 3    |
| 14   | 8    | 2    | 7     | 3       | 3   | 1    | 1    | 6      | 3     | 4    | 7    | 4    |
| 15   | 8    | 0    | 8     | 8       | 4   | 2    | 1    | 4      | 4     | 1    | 2    | 1    |
| 16   | 9    | 1    | 7     | 7       | 5   | 3    | 1    | 2      | 4     | 3    | 4    | 1    |
| 17   | 7    | 3    | 2     | 7       | 5   | 1    | 1    | 4      | 7     | 1    | 5    | 3    |
| 18   | 7    | 6    | 3     | 4       | 4   | 3    | 2    | 4      | 5     | 4    | 3    | 6    |
| 19   | 2    | 7    | 1     | 8       | 4   | 4    | 1    | 2      | 3     | 2    | 4    | 3    |
| 20   | 2    | 7    | 3     | 7       | 5   | 3    | 2    | 4      | 4     | 4    | 4    | 6    |
| 21   | 4    | 5    | 7     | 7       | 3   | 2    | 5    | 4      | 3     | 7    | 1    | 4    |
| 22   | 5    | 4    | 3     | 7       | 4   | 3    | 6    | 3      | 5     | 3    | 3    | 2    |
| 23   | 6    | 5    | 1     | 5       | 3   | 2    | 4    | 3      | 4     | 4    | 3    | 1    |
| 24   | 7    | 4    | 1     | 4       | 4   | 3    | 4    | 6      | 7     | 1    | 4    | 6    |
| 25   | 6    | 3    | 3     | omitted | 6   | 4    | 4    | 7      | 5     | 3    | 2    | 4    |
| 26   | 8    | 5    | 3     | 7       | 4   | 4    | 4    | 5      | 7     | 1    | 3    | 7    |
| 27   | 6    | 8    | 7     | 7       | 6   | 6    | 5    | 6      | 7     | 5    | 3    | 7    |
| 28   | 5    | 8    | 4     | 6       | 5   | 4    | 6    | 6      | 3     | 7    | 4    | 4    |
| 29   | 2    | —    | 5     | 4       | 4   | 2    | 6    | 5      | 7     | 7    | 2    | 2    |
| 30   | 3    | —    | 4     | 4       | 4   | 3    | 5    | 3      | 7     | 6    | 7    | 6    |
| 31   | 4    | —    | 4     | —       | 2   | —    | 3    | 2      | —     | 2    | —    | 5    |
| Mean | 4.7  | 4.4  | 4.4   | 5.4     | 4.2 | 3.6  | 3.4  | 3.4    | 4.5   | 3.7  | 3.4  | 3.6  |

## OZONE, 1872.

|      | Jan. | Feb. | March | April | May | June | July | August | Sept.   | Cot. | Nov. | Dec. |
|------|------|------|-------|-------|-----|------|------|--------|---------|------|------|------|
| 1    | 8    | 7    | 3     | 3     | 4   | 6    | 4    | 4      | 2       | 7    | 8    | 6    |
| 2    | 4    | 3    | 1     | 4     | 4   | 4    | 4    | 3      | 1       | 7    | 7    | 7    |
| 3    | 7    | 7    | 1     | 4     | 7   | 4    | 4    | 4      | 3       | 6    | 5    | 3    |
| 4    | 8    | 6    | 2     | 4     | 7   | 7    | 3    | 4      | 3       | 6    | 8    | 4    |
| 5    | 8    | 3    | 1     | 2     | 6   | 4    | 3    | 3      | 2       | 7    | 7    | 8    |
| 6    | 7    | 7    | 1     | 3     | 7   | 6    | 2    | 3      | 3       | 7    | 7    | 6    |
| 7    | 6    | 2    | 1     | 4     | 7   | 7    | 4    | 3      | 2       | 6    | 6    | 7    |
| 8    | 5    | 1    | 3     | 4     | 5   | 7    | 3    | 2      | omitted | 7    | 7    | 7    |
| 9    | 3    | 2    | 7     | 4     | 4   | 8    | 3    | 4      |         | 1    | 8    | 7    |
| 10   | 5    | 2    | 4     | 3     | 4   | 7    | 2    | 6      | 3       | 8    | 6    | 3    |
| 11   | 4    | 2    | 4     | 3     | 5   | 3    | 1    | 3      | 4       | 6    | 4    | 6    |
| 12   | 4    | 3    | 6     | 6     | 7   | 3    | 3    | 4      | 3       | 5    | 7    | 7    |
| 13   | 7    | 4    | 7     | 3     | 7   | 4    | 3    | 4      | 6       | 6    | 6    | 7    |
| 14   | 6    | 1    | 6     | 3     | 4   | 3    | 2    | 3      | 3       | 3    | 6    | 7    |
| 15   | 1    | 2    | 1     | 3     | 4   | 1    | 1    | 2      | 5       | 7    | 6    | 2    |
| 16   | 6    | 4    | 3     | 4     | 7   | 3    | 3    | 2      | 6       | 7    | 5    | 7    |
| 17   | 8    | 6    | 4     | 3     | 8   | 4    | 2    | 2      | 7       | 8    | 5    | 8    |
| 18   | 6    | 4    | 5     | 4     | 2   | 2    | 2    | 2      | 5       | 7    | 6    | 8    |
| 19   | 4    | 1    | 4     | 4     | 4   | 3    | 2    | 3      | 7       | 6    | 8    | 3    |
| 20   | 4    | 1    | 3     | 7     | 6   | 3    | 2    | 3      | 6       | 8    | 7    | 7    |
| 21   | 3    | 1    | 4     | 7     | 7   | 3    | 3    | 2      | 6       | 7    | 7    | 7    |
| 22   | 6    | 7    | 4     | 7     | 7   | 4    | 4    | 4      | 5       | 5    | 7    | 7    |
| 23   | 7    | 8    | 4     | 7     | 6   | 2    | 3    | 4      | 7       | 6    | 7    | 8    |
| 24   | 8    | 4    | 7     | 7     | 4   | 3    | 2    | 3      | 7       | 7    | 6    | 8    |
| 25   | 4    | 3    | 4     | 6     | 4   | 4    | 3    | 2      | 6       | 8    | 9    | 8    |
| 26   | 3    | 6    | 6     | 3     | 3   | 7    | 4    | 3      | 6       | 8    | 8    | 9    |
| 27   | 1    | 4    | 7     | 1     | 4   | 7    | 2    | 2      | 6       | 6    | 5    | 7    |
| 28   | 2    | 6    | 7     | 5     | 3   | 5    | 3    | 3      | 6       | 5    | 7    | 7    |
| 29   | 7    | 5    | 1     | 6     | 3   | 3    | 2    | 2      | 6       | 8    | 7    | 9    |
| 30   | 1    | —    | 4     | 5     | 6   | 4    | 5    | 3      | 7       | 8    | 8    | 9    |
| 31   | 6    | —    | 3     | —     | 6   | —    | 3    | 2      | —       | 4    | —    | 8    |
| Mean | 5.1  | 4    | 3.8   | 4.3   | 5.5 | 4.3  | 2.8  | 3      | 4.6     | 6.5  | 6.6  | 6.6  |



## OZONE, 1873.

|      | Jan. | Feb. | March   | April | May     | June | July | August | Sept. | Oct. | Nov. | Dec.    |
|------|------|------|---------|-------|---------|------|------|--------|-------|------|------|---------|
| 1    | 8    | 8    | omitted | 8     | 5       | 6    | 4    | 4      | 4     | 2    | 5    | 5       |
| 2    | 8    | 7    | 8       | 6     | 6       | 6    | 4    | 5      | 6     | 4    | 6    | 5       |
| 3    | 8    | 7    | 8       | 6     | 5       | 6    | 6    | 4      | 6     | 2    | 6    | 6       |
| 4    | 8    | 4    | 5       | 7     | 7       | 2    | 6    | 5      | 4     | 4    | 6    | 3       |
| 5    | 9    | 5    | 7       | 6     | 7       | 6    | 7    | 6      | 3     | 3    | 7    | 5       |
| 6    | 8    | 8    | 8       | 6     | 7       | 6    | 6    | 4      | 6     | 3    | 3    | 6       |
| 7    | 8    | 7    | 7       | 6     | 6       | 5    | 5    | 3      | 8     | 6    | 5    | 6       |
| 8    | 7    | 7    | 8       | 6     | 6       | 4    | 5    | 4      | 6     | 5    | 7    | 4       |
| 9    | 6    | 7    | 6       | 6     | 6       | 6    | 6    | 4      | 9     | 6    | 7    | 6       |
| 10   | 7    | 8    | 8       | 6     | 6       | 7    | 6    | 7      | 8     | 7    | 2    | 6       |
| 11   | 8    | 7    | 8       | 6     | 6       | 7    | 5    | 3      | 6     | 7    | 6    | 6       |
| 12   | 9    | 7    | 7       | 6     | 6       | 6    | 6    | 6      | 6     | 6    | 0    | 5       |
| 13   | 7    | 6    | 7       | 4     | 5       | 6    | 6    | 6      | 6     | 4    | 5    | 7       |
| 14   | 8    | 5    | 6       | 3     | omitted | 5    | 6    | 5      | 8     | 6    | 6    | 6       |
| 15   | 6    | 4    | 8       | 2     | omitted | 6    | 6    | 3      | 7     | 7    | 6    | 7       |
| 16   | 8    | 4    | 5       | 7     | 5       | 5    | 6    | 6      | 7     | 5    | 6    | 7       |
| 17   | 8    | 2    | 7       | 7     | 6       | 4    | 6    | 5      | 7     | 6    | 7    | 7       |
| 18   | 9    | 2    | 8       | 6     | 7       | 6    | 5    | 7      | 5     | 5    | 6    | 6       |
| 19   | 9    | 4    | 8       | 6     | 7       | 6    | 5    | 6      | 6     | 6    | 4    | 6       |
| 20   | 8    | 2    | 9       | 6     | 7       | 6    | 2    | 7      | 6     | 6    | 3    | 6       |
| 21   | 9    | 5    | 5       | 5     | 7       | 3    | 2    | 6      | 7     | 6    | 8    | 7       |
| 22   | 7    | 7    | 6       | 5     | 7       | 4    | 3    | 4      | 6     | 7    | 6    | 6       |
| 23   | 8    | 8    | 4       | 6     | 6       | 5    | 5    | 2      | 6     | 7    | 6    | 7       |
| 24   | 6    | 7    | 4       | 7     | 6       | 6    | 4    | 5      | 4     | 6    | 7    | 3       |
| 25   | 6    | 8    | 6       | 7     | 3       | 3    | 3    | 6      | 2     | 6    | 6    | 7       |
| 26   | 6    | 8    | 6       | 6     | 8       | 5    | 5    | 6      | 1     | 7    | 7    | 7       |
| 27   | 6    | 7    | 6       | 6     | 8       | 2    | 4    | 6      | 4     | 6    | 7    | 6       |
| 28   | 3    | 8    | 6       | 6     | 6       | 2    | 3    | 7      | 6     | 6    | 6    | 6       |
| 29   | 6    | —    | 6       | 6     | 5       | 2    | 3    | 6      | 4     | 6    | 7    | omitted |
| 30   | 4    | —    | 6       | 6     | 7       | 4    | 5    | 5      | 2     | 6    | 6    | 8       |
| 31   | 4    | —    | omitted | —     | 7       | —    | 7    | 6      | —     | 8    | 1    | 6       |
| Mean | 7    | 6    | 6.6     | 5.8   | 6.2     | 4.9  | 4.9  | 5.1    | 5.5   | 5.5  | 5.6  | 5.9     |

## OZONE, 1874.

|      | Jan. | Feb. | March                              | April | May | June | July | August | Sept. | Oct. | Nov. | Dec. |
|------|------|------|------------------------------------|-------|-----|------|------|--------|-------|------|------|------|
| 1    | 6    | 5    | 8                                  | 7     | 7   | 7    | 7    | 7      | 7     | 7    | 2    | 5    |
| 2    | 6    | 5    | 7                                  | 7     | 7   | 5    | 3    | 6      | 7     | 7    | 2    | 2    |
| 3    | 7    | 5    | 5                                  | 7     | 6   | 6    | 6    | 4      | 7     | 6    | 5    | 1    |
| 4    | 6    | 5    | 6                                  | 7     | 6   | 6    | 7    | 6      | 6     | 6    | 5    | 5    |
| 5    | 6    | 3    | Supply of<br>papers ex-<br>hausted | 7     | 6   | 6    | 6    | 8      | 6     | 7    | 2    | 4    |
| 6    | 6    | 2    |                                    | 6     | 6   | 6    | 6    | 7      | 6     | 7    | 2    | 7    |
| 7    | 7    | 7    |                                    | 6     | 7   | 7    | 6    | 6      | 6     | 7    | 5    | 8    |
| 8    | 7    | 6    |                                    | 6     | 6   | 6    | 5    | 7      | 5     | 5    | 4    | 6    |
| 9    | 6    | 8    |                                    | 7     | 7   | 6    | 6    | 6      | 7     | 6    | 2    | 8    |
| 10   | 5    | 6    | 7                                  | 6     | 7   | 6    | 5    | 7      | 6     | 7    | 3    | 6    |
| 11   | 5    | 6    | 7                                  | 7     | 7   | 7    | 6    | 7      | 8     | 6    | 6    | 8    |
| 12   | 6    | 6    | 6                                  | 6     | 6   | 6    | 6    | 8      | 7     | 3    | 6    | 7    |
| 13   | 6    | 8    | 2                                  | 7     | 6   | 6    | 6    | 8      | 6     | 3    | 6    | 5    |
| 14   | 8    | 7    | 6                                  | 6     | 7   | 6    | 3    | 7      | 7     | 3    | 6    | 7    |
| 15   | 6    | 7    | 6                                  | 8     | 7   | 6    | 5    | 6      | 6     | 6    | 3    | 3    |
| 16   | 6    | 8    | 8                                  | 6     | 7   | 6    | 6    | 7      | 6     | 6    | 5    | 7    |
| 17   | 6    | 8    | 8                                  | 3     | 6   | 7    | 6    | 7      | 6     | 7    | 6    | 8    |
| 18   | 7    | 6    | 8                                  | 6     | 6   | 7    | 5    | 5      | 6     | 7    | 6    | 7    |
| 19   | 6    | 5    | 8                                  | 6     | 6   | 6    | 6    | 4      | 5     | 6    | 7    | 4    |
| 20   | 6    | 6    | 6                                  | 6     | 6   | 6    | 6    | 1      | 6     | 6    | 7    | 3    |
| 21   | 6    | 6    | 6                                  | 3     | 6   | 6    | 6    | 5      | 4     | 7    | 3    | 5    |
| 22   | 2    | 8    | 7                                  | 6     | 6   | 6    | 6    | 4      | 6     | 7    | 3    | 5    |
| 23   | 8    | 6    | 7                                  | 6     | 6   | 6    | 7    | 6      | 7     | 4    | 6    | 4    |
| 24   | 8    | 4    | 6                                  | 6     | 7   | 7    | 6    | 3      | 3     | 4    | 5    | 8    |
| 25   | 8    | 3    | 7                                  | 3     | 6   | 6    | 5    | 5      | 3     | 8    | 6    | 5    |
| 26   | 6    | 8    | 3                                  | 5     | 6   | 6    | 7    | 3      | 5     | 7    | 7    | 3    |
| 27   | 8    | 8    | 6                                  | 6     | 6   | 3    | 7    | 3      | 3     | 2    | 2    | 6    |
| 28   | 5    | 8    | 7                                  | 6     | 7   | 4    | 7    | 5      | 4     | 2    | 3    | 4    |
| 29   | 3    | —    | 8                                  | 7     | 6   | 6    | 6    | 7      | 6     | 3    | 7    | 6    |
| 30   | 4    | —    | 8                                  | 6     | 6   | 6    | 6    | 7      | 6     | 5    | 8    | 5    |
| 31   | 6    | —    | 7                                  | —     | 7   | —    | 7    | 7      | —     | 6    | —    | 7    |
| Mean | 6    | 6    | 5.9                                | 6     | 6.3 | 6    | 6    | 5.1    | 5.7   | 5.4  | 4.6  | 5.4  |



## OZONE, 1875.

|      | Jan. | Feb. | March | April | May | June | July                               | August | Sept. | Oct. | Nov. | Dec. |
|------|------|------|-------|-------|-----|------|------------------------------------|--------|-------|------|------|------|
| 1    | 8    | 6    | 8     | 5     | 6   | 6    | 4                                  | 4      | 6     | 5    | 2    | 6    |
| 2    | 7    | 7    | 7     | 3     | 7   | 6    | 6                                  | 4      | 4     | 7    | 4    | 6    |
| 3    | 7    | 6    | 8     | 7     | 6   | 6    | 6                                  | 4      | 4     | 7    | 5    | 6    |
| 4    | 7    | 5    | 7     | 8     | 3   | 7    | 6                                  | 6      | 5     | 7    | 6    | 3    |
| 5    | 7    | 7    | 3     | 10    | 6   | 7    | 7                                  | 4      | 4     | 5    | 6    | 6    |
| 6    | 6    | 4    | 7     | 8     | 6   | 7    | 7                                  | 6      | 4     | 4    | 7    | 8    |
| 7    | 6    | 8    | 8     | 8     | 8   | 8    | 6                                  | 6      | 3     | 5    | 7    | 7    |
| 8    | 6    | 5    | 8     | 8     | 7   | 6    | 7                                  | 3      | 4     | 6    | 8    | 0    |
| 9    | 6    | 6    | 8     | 6     | 7   | 6    | 6                                  | 7      | 4     | 7    | 6    | 3    |
| 10   | 1    | 4    | 7     | 7     | 7   | 7    | 7                                  | 4      | 5     | 7    | 7    | 2    |
| 11   | 3    | 4    | 7     | 8     | 6   | 8    | 7                                  | 5      | 7     | 7    | 7    | 1    |
| 12   | 3    | 8    | 7     | 8     | 7   | 8    | 7                                  | 3      | 7     | 5    | 6    | 2    |
| 13   | 5    | 4    | 6     | 8     | 6   | 8    | 6                                  | 5      | 6     | 7    | 7    | 6    |
| 14   | 6    | 4    | 6     | 7     | 6   | 7    | 7                                  | 6      | 5     | 7    | 7    | 2    |
| 15   | 6    | 8    | 7     | 7     | 6   | 8    | 8                                  | 4      | 5     | 5    | 7    | 2    |
| 16   | 7    | 7    | 8     | 3     | 6   | 8    | 6                                  | 2      | 5     | 4    | 6    | 1    |
| 17   | 7    | 8    | 7     | 1     | 7   | 7    | 6                                  | 3      | 3     | 4    | 7    | 2    |
| 18   | 7    | 7    | 7     | 4     | 7   | 7    | 7                                  | 4      | 4     | 7    | 8    | 4    |
| 19   | 8    | 8    | 7     | 6     | 7   | 6    | 4                                  | 3      | 4     | 4    | 7    | 7    |
| 20   | 9    | 7    | 6     | 5     | 8   | 8    | 4                                  | 3      | 3     | 3    | 7    | 7    |
| 21   | 9    | 6    | 7     | 4     | 7   | 6    | 5                                  | 4      | 4     | 6    | 6    | 8    |
| 22   | 8    | 6    | 6     | 8     | 6   | 6    | 4                                  | 7      | 6     | 7    | 6    | 8    |
| 23   | 7    | 8    | 6     | 7     | 9   | 6    | Supply of<br>papers ex-<br>hausted | 5      | 3     | 7    | 7    | 8    |
| 24   | 8    | 6    | 7     | 4     | 7   | 7    |                                    | 3      | 4     | 5    | 4    | 6    |
| 25   | 8    | 5    | 6     | 7     | 8   | 7    |                                    | 4      | 3     | 2    | 6    | 8    |
| 26   | 7    | 6    | 8     | 5     | 6   | 7    |                                    | 5      | 7     | 7    | 6    | 6    |
| 27   | 5    | 7    | 8     | 5     | 7   | 7    |                                    | 4      | 4     | 8    | 6    | 4    |
| 28   | 6    | 6    | 7     | 6     | 5   | 8    | 4                                  | 4      | 7     | 5    | 3    | 3    |
| 29   | 7    | —    | 7     | 7     | 6   | 7    | 4                                  | 3      | 5     | 3    | 7    | 5    |
| 30   | 8    | —    | 6     | 6     | 7   | 7    | 3                                  | 5      | 6     | 3    | 7    | 4    |
| 31   | 6    | —    | 5     | —     | 7   | —    | 4                                  | 6      | —     | 2    | —    | 6    |
| Mean | 6.4  | 6.1  | 6.8   | 6.2   | 6.5 | 6.9  | 5.6                                | 4.3    | 4.8   | 5.3  | 6.2  | 4.7  |

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