# STONYHURST COLLEGE OBSERVATORY.

# RESULTS

OF

# METEOROLOGICAL, MAGNETICAL,

AND

# SOLAR OBSERVATIONS

BY THE

REV. W. SIDGREAVES, S.J., F.R.A.S.

1895

CLITHEROE:
PRINTED BY PARKINSON AND BLACOW, TIMES OFFICE.
1896

# TABLE OF CONTENTS.

# INTRODUCTION.

The work of the Meteorological and Magnetical department has been carried on as described in the Introduction 1892. The weekly reports have been sent regularly to the Meteorological Office, and the monthly report to the Registrar General. Occasional special reports have also been supplied to applications.

The new Stonyhurst Sunshine Recorder, made by Messrs. Newton and Co., has been tested by comparisons with the Campbell Stokes Recorder of the Meteorological Office, and has been found to work very satisfactorily.

Two additions have been made to the Magnetic Report, compiled from the measures of the daily curves of Horizontal Direction and Force. These consist of the Monthly Means of the greatest and least measures of each day, and of the measures at 4-0 a.m. and 4-0 p.m. The Highest and Lowest readings of each month and the resulting ranges are also entered, and the differences between the mean of the Highest and Lowest readings, and that of the readings at 4 a.m. and 4 p.m. All the figures in the table are entered without correction for temperature. The adopted annual mean is corrected for the diurnal range, the correction being taken from the Kew Reports 1891, 92, 93, 94; and is the mean of the range quoted in those years for the hours 4 a.m. and 4 p.m.

The scale value of the bifilar magnetometer was measured by the method of deflections, in May; and was found to be for one centimetre :—

| | | | |
|---|---|---|---|
| in | 1895, | 0·000513 | C.G.S. units. |
| It was | 1894, | 0·000512 | „ |
| „ | 1893, | 0·000511 | „ |
| „ | 1892, | 0·000515 | „ |

On October 12th, an accident occurred in the Magnetic Chamber, which resulted in a gas explosion. This seems to have shaken the base line reflector of the bifilar. A re-measurement of the scale value was made on February 10th, 1896, which gave the figure 0·000514, and showed that no further injury had been done.

The adopted reading of the bifilar base line is 0·16871 C.G.S., up to October 12, and the subsequent reading is 0·16945. These are the mean values obtained from the monthly absolute measures. The latter reading consequently depends upon three measures only: the former is the mean of the measures from January, 1892 to October, 1895.

The scale value of the Unifilar is 11 ″·28 per centimetre. And its base line value deduced from the weekly absolute measures at 4 p.m. is 17° 45′.7.

No reductions of the vertical force curves have been made; because, in the judgment of the Director, these curves, though of great value in connection with the character of disturbances, cannot be relied upon for accurate measurements.

The instruments for absolute measures of the Magnetic elements were compared in August with the instruments adopted as standards by the Physical section of the British Association for the advancement of science: with the object of co-ordinating the measures obtained at the several Magnetic Observatories of the United Kingdom. The results of these comparisons are expected at the next meeting of the same Association. It seems probable at present that our instruments, and notably those of the horizontal and vertical directions, are not free from a disturbing magnetic influence, residing either in the wooden boxes, or in the metal supports. The axles of the dipping

needles and the agate knife edges may also be faulty; but it has not been thought advisable to make any alterations before the complete report has been made out and discussed.

Drawings of the solar spots and faculae have been made on nearly all the days on which it was possible, without too great an expenditure of time in waiting for clear intervals. And, in connection with them, photographs of the H-K region of the solar spectrum have been taken with the grating spectrograph, with the object of observing how closely the double reversals by integrated solar light follow the disturbances of the solar surface.

A wave-length chart of the spectra of 43 of the brighter stars has been made from the photographs obtained with the old eight-inch Objective.

The spectroscopic experimental work with the Father Perry Memorial objective was not completely finished until the end of April. These experiments represent a large number of photographic stellar spectra; but they are of no value for measurements, having been taken with thirteen different collimators and seven different camera lenses. Several prisms have also been tried, but not all photographically. The finally adopted arrangement is a slitless spectrograph of one (or two) direct compound prisms of three components each, with a concave compound collimator to correct the dispersed photographic rays between D and H to parallelism.

A very satisfactory wave-length curve has been plotted for the one prism; and another for the two prisms will shortly be made.

A new series of photographs of the spectrum of $\beta$ Lyrae has been made, 77 plates in all; and, of these, 39, or three good plates for each day of the light period, have been selected for measurement. The measurements were well advanced, but not complete at the close of the year.

WALTER SIDGREAVES, S.J.

# Stonyhurst Observatory.

Lat. 53° 50′ 40″ N. Long. 9m. 52$^{s}$.68. W. Height of the Barometer above the sea 381ft.

## METEOROLOGICAL REPORT.

### JANUARY, 1895.

| Result of Observations taken during the Month. | | Mean for the last 48 years. |
|---|---|---|
| Mean Reading of the Barometer....inches | 29·296 | 29·436 |
| Highest ,, on the 30th ,, | 30·222 | 30·280 |
| Lowest ,, on the 14th ,, | 28·511 | 28·585 |
| Range of Barometer Readings ..... ,, | 1·711 | 1·695 |
| Highest Reading of a Max. Therm. on the 2nd | 44·2 | 51·4 |
| Lowest Reading of a Min. Therm. on the 27th | 15·1 | 20·3 |
| Range of Thermometer Readings ..... ..... | 29·1 | 31·1 |
| Mean of all the Highest Readings ..... | 36·8 | 42·1 |
| Mean of all the Lowest Readings ..... | 25·7 | 32·3 |
| Mean Daily Range .. ..... | 11·1 | 9·8 |
| Deduced Monthly Mean (from Mean of Max. and Min.) ..... | 31·1 | 36·9 |
| Mean Temperature from Dry Bulb ..... | 31·5 | 37·0 |
| Adopted Mean Temperature ..... ... | 31·3 | 37·0 |
| Mean Temperature of Evaporation..... | 29·7 | 35·8 |
| Mean Temperature of Dew Point ..... | 25·6 | 33 6 |
| Mean elastic force of Vapour ..... | 0·138in | 0·194in |
| Mean weight of Vapour in a cub. ft. of air .... | 1·6gr | 2·4gr |
| Mean additional weight required for saturation | 0·5gr | 0·4gr |
| Mean degree of Humidity (saturation 1·00) ... | 0·79 | 0·86 |
| Mean weight of a cubic foot of air ..... | 554·0gr | 549·6gr |
| Fall of Rain ..... ..... | 2·800in | 4·113in |
| Number of days on which Rain fell ..... | 22 | 19·8 |

## JANUARY, 1895.

| | N | NE | E | SE | S | SW | W | NW |
|---|---|---|---|---|---|---|---|---|
| No. of days in the month on which the prevailing wind was | 13 | 4 | 6 | 0 | 0 | 0 | 5 | 3 |
| Mean Velocity in miles per hour | 15·5 | 9·1 | 16·2 | 0 | 0 | 0 | 11·6 | 7·1 |
| Total No. of miles for each Direction | 4848 | 870 | 2337 | 0 | 0 | 0 | 1392 | 511 |

The total No. of miles registered during the month was 9958.

The max. Velocity of the wind was 39 miles per hour. Direction E. on the 13th at 7 a.m.

Mean amount of Cloud (an overcast sky being indicated by 10·0) 7·0

In the month of January, the highest reading of the Barometer during 48 years, was on the 18th in 1882, and was 30·480

The lowest ,, 26th, 1884 ,, .... 27·803

The highest Temperature 7th, 1887 ,, .... 59·9

The lowest ,, 15th, 1881 ,, .... 4·6

The highest adopted mean temperature of the month, 1875 42·5

The lowest ,, ,, 1881.... 29·2

### TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

| | | | |
|---|---|---|---|
| Mean barometric pressure .. .. | — | 0·140 | inches |
| Monthly range ,, .. .. | + | 0·016 | ,, |
| Mean of highest temperatures .. .. | — | 5·3 | degrees |
| Mean of lowest ,, .. .. | — | 6·6 | ,, |
| Mean daily range ,, .. .. | + | 1·3 | ,, |
| Adopted mean temperature .. .. | — | 5·7 | ,, |
| Total rainfall .. .. .. .. | — | 1·313 | inches |

Frost every day except the 20th, on which day the lowest ground temperature was 33°. Snow on 14 days; hail on 5 days; lightning on the 24th; thunder on the 27th.

## FEBRUARY, 1895.

| Results of Observations taken during the Month. | | Mean for the last 48 years. |
|---|---|---|
| Mean Reading of the Barometer..... | 29·704 | 29·510 |
| Highest ,, on the 16th.... | 30·188 | 30·067 |
| Lowest ,, on the 26th.... | 29·265 | 28·694 |
| Range of Barometer Readings..... | 0·923 | 1·373 |
| Highest Reading of a Max. Therm. on the 24th | 44·3 | 52·0 |
| Lowest Reading of a Min. Therm. on the 7th | 8·0 | 22·1 |
| Range of Thermometer Readings ..... | 36·3 | 29·9 |
| Mean of all the Highest Readings ..... | 36·2 | 44·2 |
| Mean of all the Lowest Readings..... | 22·8 | 33·4 |
| Mean Daily Range ..... | 13·4 | 10·8 |
| Deduced Monthly Mean (from Mean of Max. and Min.) ..... | 29·1 | 38·2 |
| Mean Temperature from Dry Bulb ..... | 28·8 | 38·2 |
| Adopted Mean Temperature..... | 29·0 | 38·2 |
| Mean Temperature of Evaporation..... | 27·0 | 36·7 |
| Mean Temperature of Dew Point..... | 21·2 | 34·5 |
| Mean elastic force of Vapour ..... | 0·113 in | 0·192in |
| Mean weight of Vapour in a cub. ft. of air .. | 1·4gr | 2·4gr |
| Mean additional weight required for saturation | 0·5gr | 0·4 gr |
| Mean degree of Humidity (saturation 1·00) .. | 0·072 | 0·87 |
| Mean weight of a cubic foot of air ..... | 564·4gr | 548 9gr |
| Fall of Rain ..... ..... | 0·553 in | 3·493 in |
| Number of days on which Rain fell..... | 6 | 16·9 |

| | N | NE | E | SE | S | SW | W | NW |
|---|---|---|---|---|---|---|---|---|
| No. of days in the month on which the prevailing wind was | 9 | 3 | 10 | 0 | 2 | 2 | 2 | 0 |
| Mean Velocity in miles per hour | 5·6 | 7·6 | 8·8 | 0 | 6·3 | 5·0 | 11·2 | 0 |
| Total No. of miles for each Direction | 1205 | 545 | 2123 | 0 | 301 | 240 | 536 | 0 |

The total number of miles registered during the month was 4950.
The max. Velocity of the wind was 31 miles per hour. Direction E. by N., on the 16th, at 7·0 a.m.

## FEBRUARY, 1895.

| | | | |
|---|---|---|---|
| Mean amount of Cloud (an overcast sky being indicated by 10·0) | | | 6·0 |
| In the month of February, the highest reading of the Barometer during 48 years, was on the | 11th, | in 1849, and was .. | 30·452 |
| The lowest ,, | 6th, 1867 | ,, .... | 28·208 |
| The highest Temperature | 8th, 1877 | ,, .... | 58·3 |
| The lowest ,, | 18th, 1895 | ,, .... | 8·0 |
| The highest adopted mean temperature of the month, | | 1869.... | 44·0 |
| The lowest ,, | ,, | 1855.... | 28·6 |

### TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

| | | | |
|---|---|---|---|
| Mean barometric pressure .. .. | + | 0·194 | inches |
| Monthly range ,, .. .. | — | 0·450 | ,, |
| Mean of highest temperatures .. .. | — | 8·0 | degrees |
| Mean of lowest ,, .. .. | — | 10·6 | ,, |
| Mean daily range ,, .. .. | + | 2·6 | ,, |
| Adopted mean temperature .. .. | — | 9·2 | ,, |
| Total rainfall .. .. .. .. | — | 2·940 | inches |

Frost every day of the month. During the week from 7th to 13th, the ground temperatures were respectively 8°, 5°, 4°, 9°, 16°, 4°, and 8° Fahr. Hoar Frost on the 20th and 22nd. Snow on 11 days. Fog on the 23rd and 28th. Aurora Borealis on the 15th and 24th.

# MARCH, 1895.

| Results of Observations taken during the Month. | | Mean for the last 48 years |
|---|---|---|
| Mean Reading of the Barometer | 29·241 | 29·469 |
| Highest ,, on the 16th | 29·932 | 30·080 |
| Lowest ,, on the 28th | 28·194 | 28·675 |
| Range of Barometer Readings | 1·738 | 1·405 |
| Highest Reading of a Max. Ther. on the 14th & 20th | 54·0 | 57·2 |
| Lowest Reading of a Min. Therm. on the 3rd | 21·7 | 22·3 |
| Range of Thermometer Readings | 32·3 | 34·9 |
| Mean of all the Highest Readings | 48·1 | 47·2 |
| Mean of all the Lowest Readings | 34·5 | 34·0 |
| Mean Daily Range | 13·6 | 13·2 |
| Deduced Monthly Mean (from Mean of Max. and Min.) | 40·3 | 39·7 |
| Mean Temperature from Dry Bulb | 40·0 | 39·9 |
| Adopted Mean Temperature | 40·2 | 39·8 |
| Mean Temperature of Evaporation | 38·5 | 37·9 |
| Mean Temperature of Dew Point | 36·4 | 35·4 |
| Mean elastic force of Vapour | 0·215 in | 0·205 in |
| Mean weight of Vapour in a cub. ft. of air | 2·5 gr | 2·4 gr |
| Mean additional weight required for saturation | 0·4 gr | 0·5 gr |
| Mean degree of Humidity (saturation 1·00) | 0·87 | 0·85 |
| Mean weight of a cubic foot of air | 542·4 gr | 546·6 gr |
| Fall of rain | 4·365 in | 3·121 in |
| Number of Days on which rain fell | 22 | 17·4 |

| | N | NE | E | SE | S | SW | W | NW |
|---|---|---|---|---|---|---|---|---|
| No. of days in the month on which the prevailing wind was | 7 | 0 | 2 | 1 | 2 | 7 | 9 | 3 |
| Mean Velocity in miles per hour | 7·0 | 0 | 8·1 | 13·1 | 11·7 | 10·5 | 11·0 | 10·9 |
| Total No. of miles for each Direction. | 1161 | 0 | 391 | 315 | 560 | 1770 | 2371 | 785 |

The total No. of miles registered during the month was 7353. The max. Velocity of the wind was 41 miles per hour. Direction N.W. by W., on the 24th at 2·0 p.m.

## MARCH, 1895.

| | |
|---|---|
| Mean amount of Cloud (an overcast sky being indicated by 10·0) | 8·1 |
| In the month of March, the highest reading of the Barometer during 48 years, was on the 6th, in 1852, and was.... | 30·401 |
| The lowest ,, 28th, 1895 ,, .. | 28·194 |
| The highest Temperature ,, 25th, 1871 ,, .. | 68·0 |
| The lowest ,, ,, 6th, 1886 ,, .. | 11·5 |
| The highest adopted mean temperature of the month, 1871.. | 44·0 |
| The lowest ,, ,, 1855 and 1892 .. | 35·6 |

### TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

| | | |
|---|---|---|
| Mean barometric pressure .. .. | — | 0·028 inches |
| Monthly range ,, .. .. | + | 0·333 ,, |
| Mean of highest temperature .. .. | + | 0·9 degrees |
| Mean of lowest ,, .. .. | + | 0·5 ,, |
| Mean daily range ,, .. .. | + | 0·4 ,, |
| Adopted mean temperature .. .. | + | 0·4 ,, |
| Total rainfall .. .. .. .. | + | 1·244 inches |

The lowest barometer reading for the month of March during the last 48 years was recorded on the 28th, when the mercury stood at 28·194 inches at 9-0 a.m. Frost on the 7th. An inch of rain fell on the 23rd. The aurora of the 13th was remarkable as a narrow belt of luminescence extending from east to west, a little north of zenith.

## APRIL, 1895.

| Results of Observations taken during the Month. | | Mean for the last 48 years. |
|---|---|---|
| Mean Reading of the Barometer ..... | 29·455 | 29·484 |
| Highest ,, on the 12th.... | 29·992 | 29·969 |
| Lowest ,, on the 6th ..... | 28·775 | 28·804 |
| Range of Barometer Readings ..... | 1·217 | 1·165 |
| Highest Reading of a Max. Therm. on the 29th | 63.0 | 66·1 |
| Lowest Reading of a Min. Therm. on the 7th | 26·5 | 28·1 |
| Range of Thermometer Readings ..... | 36·5 | 38·0 |
| Mean of all the Highest Readings ..... | 56·2 | 55·9 |
| Mean of all the Lowest Readings ..... | 37·4 | 37·8 |
| Mean Daily Range ..... | 18·8 | 18·1 |
| Deduced Monthly Mean (from Mean of Max. and Min.) ..... | 45·3 | 44·5 |
| Mean Temperature from Dry Bulb ..... | 45·3 | 44·6 |
| Adopted Mean Temperature ..... | 45·3 | 44·5 |
| Mean Temperature of Evaporation ..... | 42·5 | 41·7 |
| Mean Temperature of Dew Point ..... | 39·3 | 38·2 |
| Mean elastic force of Vapour ..... | 0·241in | 0·236in |
| Mean weight of Vapour in a cub. ft. of air .. | 2·8gr | 2·7gr |
| Mean additional weight required for saturation | 0·7gr | 0·7gr |
| Mean degree of Humidity (saturation 1·00).. | 0·80 | 0·80 |
| Mean weight of a cubic foot of air ..... | 541·3gr | 542·0gr |
| Fall of Rain ..... | 2·648in | 2·266in |
| Number of Days on which rain fell ..... | 14 | 14·6 |

| | N | NE | E | SE | S | SW | W | NW |
|---|---|---|---|---|---|---|---|---|
| No. of days in the month on which the prevailing wind was | 2 | 7 | 3 | 0 | 5 | 3 | 10 | 0 |
| Mean Velocity in miles per hour | 7·0 | 7·7 | 10·5 | 0 | 11·1 | 14·8 | 11·3 | 0 |
| Total No. of miles for each Direction | 336 | 1300 | 753 | 0 | 1333 | 1062 | 2718 | 0 |

The total number of miles registered during the month was 7502. The max. Velocity of the wind was 36 miles per hour. Direction W.S.W., on the 6th at 4 p.m.

## APRIL, 1895.

| | | | |
|---|---|---|---|
| Mean amount of Cloud (an overcast sky being indicated by 10·0) | | | 7·4 |
| In the month of April, the highest reading of the Barometer during 48 years, was on the | 17th, | in 1887, and was..... | 30·251 |
| The lowest ,, | 20th, | 1868 ,, ..... | 28·358 |
| The highest Temperature | 14th, | 1852 ,, ..... | 74·1 |
| The lowest ,, | 13th, | 1892 ,, ..... | 20·8 |
| The highest adopted mean temperature of the month, | | 1865.... | 48·5 |
| The lowest ,, | ,, | 1879 .... | 40·7 |

### TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

| | | | |
|---|---|---|---|
| Mean barometric pressure .. .. | — | 0·029 | inches |
| Monthly range ,, .. .. | + | 0·052 | ,, |
| Mean of highest temperatures .. .. | + | 0·3 | degrees |
| Mean of lowest ,, .. .. | — | 0·4 | ,, |
| Mean daily range ,, .. .. | + | 0·7 | ,, |
| Adopted mean temperature .. .. | + | 0·8 | ,, |
| Total rainfall .. .. .. | + | 0·382 | inches |

Frost on 12 days. Snow on the 3rd. Hail on the 24th. Thunder on the 21st and 24th. Lightning on the 24th. Lunar halo on the 4th. Aurora on the 23rd.

## MAY, 1895.

| Results of Observations taken during the Month | | Mean for the last 48 years. |
|---|---|---|
| Mean Reading of the Barometer | 29·695 | 29·509 |
| Highest ,, on the 2nd | 30·217 | 29·950 |
| Lowest ,, on the 31st | 29·271 | 28·947 |
| Range of Barometer Readings | 0·946 | 1·003 |
| Highest Reading of a Max. Therm. on the 30th | 80·5 | 72·1 |
| Lowest Reading of a Min. Therm. on the 1st | 32·6 | 31·3 |
| Range of Thermometer Readings | 47·9 | 40·8 |
| Mean of all the Highest Readings | 65·0 | 59·8 |
| Mean of all the Lowest Readings | 43.5 | 42·1 |
| Mean Daily Range | 21·5 | 17·7 |
| Deduced Monthly Mean (from Mean of Max. and Min.) | 52·5 | 49·1 |
| Mean Temperature from Dry Bulb | 52·7 | 49.6 |
| Adopted Mean Temperature | 52·6 | 49·3 |
| Mean Temperature of Evaporation | 48·1 | 46.1 |
| Mean Temperature of Dew Point | 43·6 | 42·6 |
| Mean elastic force of Vapour | 0·283 in | 0·276in |
| Mean weight of Vapour in a cubic ft. of air | 3·3gr | 2·3gr |
| Mean additional weight required for saturation | 1·3gr | 0·9gr |
| Mean degree of Humidity (saturation 1·00) | 0·72 | 0·76 |
| Mean weight of a cubic foot of air | 537·0gr | 537·0gr |
| Fall of Rain | 0·500in | 2 596in |
| Number of days on which Rain fell | 9 | 15·3 |

| No. of days in the month on which the prevailing wind was | N | NE | E | SE | S | SW | W | NW |
|---|---|---|---|---|---|---|---|---|
| | 8 | 4 | 5 | 0 | 3 | 2 | 7 | 2 |
| Mean Velocity in miles per hour | 8·9 | 5·2 | 10·3 | 0 | 9·7 | 4·4 | 8·3 | 14·7 |
| Total No. of miles for each Direction | 1705 | 497 | 1232 | 0 | 697 | 210 | 1392 | 708 |

The total number of miles registered during the month was 6441. The max. Velocity of the wind was 33 miles per hour. Direction N.W. by W., on the 15th, at 1 a.m.

## MAY, 1895.

| | | | | |
|---|---|---|---|---|
| Mean amount of Cloud (an overcast sky being indicated by 10·0) | | | | 6·0 |
| In the month of May, the highest reading of the Barometer during 48 years, was on the 2nd in 1895, and was..... | | | | 30·217 |
| The lowest | ,, | 28th, 1877 | ,, ..... | 28·559 |
| The highest Temperature | | 19th, 1864 | ,, ..... | 82·5 |
| The lowest | ,, | 4th, 1855 | ,, ..... | 23·5 |
| The highest adopted mean temperature of the month, | | | 1848 | 55·1 |
| The lowest | ,, | ,, | 1855 | 45 0 |

### TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

| | | | |
|---|---|---|---|
| Mean barometric pressure .. .. | + | 0·186 | inches |
| Monthly range ,, .. .. | — | 0·057 | ,, |
| Mean of highest temperatures .. .. | + | 5·2 | degrees |
| Mean of lowest ,, .. .. | + | 1·4 | ,, |
| Mean daily range ,, .. .. | + | 3·8 | ,, |
| Adopted Mean temperature .. .. | + | 3·3 | ,, |
| Total rainfall .. .. .. .. | — | 2·096 | inches |

The highest barometer reading for the month of May during the last 48 years was recorded on the 2nd, the reading being 30·217 inches at 10-15 p.m. Frost on the 2nd and 3rd; thunder on the 24th, 25th, and 30th; Lightning on the 25th and 30th; lunar halos on the 5th, 7th, and 8th.

## JUNE, 1895.

| Results of Observations taken during the Month. | | Mean for the last 48 years. |
|---|---|---|
| Mean Reading of the Barometer | 29·659 | 29·544 |
| Highest ,, on the 24th | 30·049 | 29·897 |
| Lowest ,, on the 29th | 29·162 | 29·035 |
| Range of Barometer Readings | 0·887 | 0·862 |
| Highest Reading of a Max. Therm. on the 25th | 83·2 | 77·4 |
| Lowest Reading of a Min. Therm. on the 15th | 36·3 | 38·7 |
| Range of Thermometer Readings | 46·9 | 38·7 |
| Mean of all the Highest Readings | 69·2 | 65·8 |
| Mean of all the Lowest Readings | 45·8 | 47·8 |
| Mean Daily Range | 23·4 | 18·0 |
| Deduced Monthly Mean (from Mean of Max. and Min.) | 55·7 | 55·0 |
| Mean Temperature from Dry Bulb) | 56·0 | 55·1 |
| Adopted Mean Temperature | 55·9 | 55·0 |
| Mean Temperature of Evaporation | 51·9 | 52·0 |
| Mean Temperature of Dew Point | 48·1 | 48·5 |
| Mean elastic force of Vapour | 0·339 in | 0·354in |
| Mean weight of Vapour in a cub. ft. of air | 3·8gr | 3·9gr |
| Mean additional weight required for saturation | 1·2gr | 0·9gr |
| Mean degree of Humidity (saturation 1·00) | 0·76 | 0·79 |
| Mean weight of a cubic foot of air | 532·8gr | 531·3gr |
| Fall of Rain | 3·423 in | 3·618in |
| Number of days on which Rain fell | 13 | 16·1 |

| | N | NE | E | SE | S | SW | W | NW |
|---|---|---|---|---|---|---|---|---|
| No. of days in the month on which the prevailing wind was | 1 | 1 | 4 | 0 | 2 | 2 | 20 | 0 |
| Mean Velocity in miles per hour | 3·4 | 4·3 | 5·4 | 0 | 8·7 | 5·6 | 7·4 | 0 |
| Total No. of miles for each Direction. | 81 | 103 | 518 | 0 | 417 | 270 | 3574 | 0 |

The total number of miles registered during the month was 4963.
The max. Velocity of the wind was 23 miles per hour. Direction W. on the 11th at 1 p.m.

## JUNE, 1895.

| | | | |
|---|---|---|---|
| Mean amount of Cloud (an overcast sky being indicated by 10·0) | | | 6·5 |
| In the month of June, the highest reading of the Barometer during 48 years, was on the | 15th, | in 1874, and was ..... | 30·219 |
| The lowest ,, | 23rd, 1893 | ,, ..... | 28 813 |
| The highest Temperature | 18th, 1893 | ,, ..... | 88·7 |
| The lowest ,, | 17th, 1892 | ,, ..... | 34 1 |
| The highest adopted mean temperature of the month, | | 1858 .. | 59·0 |
| The lowest ,, | ,, | 1856 and 1860.. | 52·2 |

### TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

| | | | |
|---|---|---|---|
| Mean barometric pressure .. | .. | + | 0·115 inches |
| Monthly range ,, .. | .. | + | 0·025 ,, |
| Mean of highest temperatures .. | .. | + | 3·4 degrees |
| Mean of lowest ,, .. | .. | — | 2·0 ,, |
| Mean daily range ,, .. | .. | + | 5·4 ,, |
| Adopted mean temperature .. | .. | + | 0·9 ,, |
| Total rainfall .. | .. | — | 0·195 inches |

A heavy thunderstorm occurred on the 1st, accompanied with 1·118 inches of rain. Thunder was also heard on the 26th, 27th, 28th, 29th, and 30th. Lightning on the 1st, 29th, and 30th.

# JULY, 1895.

| Results of Observations taken during the Month. | | Mean for the last 48 years |
|---|---|---|
| Mean Reading of the Barometer | 29·410 | 29·499 |
| Highest ,, on the 6th | 29·857 | 29·879 |
| Lowest ,, on the 21st | 28·957 | 28·990 |
| Range of Barometer Readings | 0·900 | 0·889 |
| Highest Reading of a Max. Therm. on the 8th | 77·0 | 78·8 |
| Lowest Reading of a Min. Ther. on the 29th & 31st | 41·0 | 42·1 |
| Range of Thermometer Readings | 36·0 | 36·7 |
| Mean of all the Highest Readings | 68·3 | 67·8 |
| Mean of all the Lowest Readings | 48·9 | 50·7 |
| Mean Daily Range | 19·4 | 17·1 |
| Deduced Monthly Mean (from Mean of Max. and Min.) | 56·7 | 57·7 |
| Mean Temperature from Dry Bulb | 56·3 | 57·7 |
| Adopted Mean Temperature | 56·5 | 57·7 |
| Mean Temperature of Evaporation | 53·4 | 54·7 |
| Mean Temperature of Dew Point | 50·5 | 52·1 |
| Mean elastic force of Vapour | 0·368in | 0·389in |
| Mean weight of Vapour in a cub. ft. of air | 4·1gr | 4.5gr |
| Mean additional weight required for saturation | 1·0gr | 1·0gr |
| Mean degree of Humidity (saturation 1·00) | 0·80 | 0·82 |
| Mean weight of a cubic foot of air | 528·3gr | 527·3gr |
| Fall of Rain | 5·319in | 4·247in |
| Number of days on which Rain fell | 20 | 18·1 |

| | N | NE | E | SE | S | SW | W | NW |
|---|---|---|---|---|---|---|---|---|
| No. of days in the month on which the prevailing wind was | 3 | 0 | 0 | 0 | 3 | 7 | 18 | 0 |
| Mean Velocity in miles per hour | 6·3 | 0 | 0 | 0 | 7·4 | 8·1 | 11·8 | 0 |
| Total No. of miles for each Direction | 455 | 0 | 0 | 0 | 532 | 1366 | 5088 | 0 |

The total number of miles registered during the month was 7441. The max. Velocity of the wind was 37 miles per hour. Direction W. by S., on the 14th at Noon.

## JULY, 1895.

| | | | |
|---|---|---|---|
| Mean amount of Cloud (an overcast sky being indicated by 10·0) | | | 7·7 |
| In the month of July, the highest reading of the Barometer during 48 years, was on the | 24th, in 1868, and was | ..... | 30·112 |
| The lowest ,, | 15th, 1877 ,, | ..... | 28·564 |
| The highest Temperature | 22nd, 1873 ,, | ..... | 88·2 |
| The lowest ,, | 1st, 1857 ,, | ..... | 36·0 |
| The highest adopted mean temperature of the month, | 1852.... | | 63·0 |
| The lowest ,, | ,, | 1888.... | 54·5 |

### TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

| | | | |
|---|---|---|---|
| Mean barometric pressure .. | .. | — | 0·089 inches |
| Monthly Range ,, .. | .. | + | 0·011 ,, |
| Mean of highest temperatures .. | .. | + | 0·5 degrees |
| Mean of lowest ,, .. | .. | — | 1·8 ,, |
| Mean daily range ,, .. | .. | + | 2·3 ,, |
| Adopted mean temperature .. | .. | — | 1·2 ,, |
| Total rainfall .. | .. | + | 1·072 inches |

Thunder on the 1st, 2nd, 3rd, 7th, 21st and 26th. Lightning on the 1st, 2nd, 21st and 26th.

# AUGUST, 1895.

| Results of Observations taken during the Month | | Mean for the last 48 years. |
|---|---|---|
| Mean Reading of the Barometer..... | 29·417 | 29·487 |
| Highest ,, on the 15th ..... | 29·817 | 29·883 |
| Lowest ,, on the 3rd..... | 28·846 | 28·944 |
| Range of Barometer Readings ..... | 0·971 | 0·939 |
| Highest Reading of a Max. Therm. on the 17th | 78·0 | 77·0 |
| Lowest Reading of a Min. Therm. on the 24th | 41·6 | 41·2 |
| Range of Thermometer Readings ..... | 36·4 | 35·8 |
| Mean of all the Highest Readings ..... | 68·9 | 67·2 |
| Mean of all the Lowest Readings ..... | 51·6 | 50·4 |
| Mean Daily Range..... | 17·3 | 16·8 |
| Deduced Monthly Mean (from Mean of Max. and Min.) ..... | 58·6 | 57·1 |
| Mean Temperature (deduced from Dry Bulb) | 58·7 | 57·5 |
| Adopted Mean Temperature ..... | 58·7 | 57·3 |
| Mean Temperature of Evaporation .. ..... | 55·6 | 54·5 |
| Mean Temperature of Dew Point ..... | 52·8 | 51·9 |
| Mean elastic force of Vapour ..... | 0·401 in | 0·388in |
| Mean weight of Vapour in a cub. ft. of air ..... | 4·4gr | 4·3gr |
| Mean additional weight required for saturation | 1·0gr | 0·9gr |
| Mean degree of Humidity (saturation 1·00)... | 0·81 | 0·82 |
| Mean weight of a cubic foot of air..... | 525·1gr | 527·3gr |
| Fall of Rain.. ..... ..... .. | 5·199in | 5·072in |
| Number of days on which Rain fell ..... | 21 | 19.1 |

| | N | NE | E | SE | S | SW | W | NW |
|---|---|---|---|---|---|---|---|---|
| No. of days in the month on which the prevailing wind was | 1 | 0 | 0 | 0 | 2 | 12 | 15 | 1 |
| Mean Velocity in miles per hour | 4·3 | 0 | 0 | 0 | 11·5 | 9·7 | 8·8 | 3·0 |
| Total No. of miles for each Direction | 102 | 0 | 0 | 0 | 550 | 2806 | 3181 | 71 |

The total number of miles registered during the month was 6710.
The max. Velocity of the wind was 34 miles per hour. Direction W.S.W., at Noon.

## AUGUST, 1895.

| | | | |
|---|---|---|---|
| Mean amount of Cloud (an overcast sky being indicated by 10·0) | | | 8·7 |
| In the month of August, the highest reading of the Barometer during 48 years, was on the | 21st, in 1874, and was .... | | 30·114 |
| The lowest ,, | 31st, 1876 ,, .. | | 28·555 |
| The highest Temperature | 2nd, 1868 ,, .... | | 88·0 |
| The lowest ,, | 13th, 1887 ,, .... | | 33·4 |
| The highest adopted mean temperature of the month, | | 1857 & '84 | 61·0 |
| The lowest ,, | ,, | 1848 .... | 52·5 |

### TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

| | | | |
|---|---|---|---|
| Mean barometric pressure .. .. | — | 0·070 | inches |
| Monthly range ,, .. .. | + | 0·032 | ,, |
| Mean of highest temperatures .. .. | + | 1·7 | degrees |
| Mean of the lowest ,, .. .. | + | 1·2 | ,, |
| Mean daily range ,, .. .. | + | 0·5 | ,, |
| Adopted mean temperature .. .. | + | 1·4 | ,, |
| Total rainfall .. .. | + | 0·127 | ,, |

1·320 inches of rain fell on the 26th. Thunder on the 3rd, 10th, 12th, 13th, 17th, 23rd, and 27th. Lightning on the 10th, 22nd, and 23rd.

## SEPTEMBER, 1895.

| Results of observations taken during the Month. | | Mean for the last 48 years. |
|---|---|---|
| Mean Reading of the Barometer ..... | 29·703 | 29·521 |
| Highest ,, on the 20th.... | 29·989 | 30·025 |
| Lowest ,, on the 11th.... | 29·112 | 28·860 |
| Range of Barometer Readings..... | 0·877 | 1·165 |
| Highest Reading of a Max. Therm. on the 9th | 79·5 | 72·6 |
| Lowest Reading of a Min. Therm. on the 21st | 40·0 | 36·5 |
| Range of Thermometer Readings ..... | 39·5 | 36·1 |
| Mean of all the Highest Readings..... | 69·3 | 62·4 |
| Mean of all the Lowest Readings ..... | 50·0 | 47·0 |
| Mean Daily Range..... | 19·3 | 15·4 |
| Deduced Monthly Mean (from Mean of Max. and Min.) ..... | 58·4 | 53·5 |
| Mean Temperature from dry bulb ..... | 58·0 | 54·1 |
| Adopted Mean Temperature ..... | 58·2 | 53·8 |
| Mean Temperature of Evaporation..... | 55·0 | 51·0 |
| Mean Temperature of Dew Point..... | 52·1 | 48·3 |
| Mean elastic force of Vapour..... | 0·391in | 0·339in |
| Mean weight of Vapour in a cub. ft. of air..... | 4·4gr | 4·0gr |
| Mean additional weight required for saturation.. | 1·1gr | 0·8gr |
| Mean degree of Humidity (saturation 1·00).... | 0·80 | 0·82 |
| Mean weight of a cubic foot of air ..... | 530·8gr | 532·3gr |
| Fall of Rain ..... | 2·044in | 4·545in |
| Number of days on which Rain fell ..... | 14 | 17·8 |

| | N | NE | E | SE | S | SW | W | NW |
|---|---|---|---|---|---|---|---|---|
| No. of days in the month on which the prevailing wind was | 0 | 5 | 1 | 0 | 5 | 7 | 12 | 0 |
| Mean Velocity in miles per hour | 0 | 4·2 | 3·5 | 0 | 3·8 | 6·1 | 9·0 | 0 |
| Total No. of miles for each Direction | 0 | 498 | 83 | 0 | 451 | 1023 | 2590 | 0 |

The total number of miles registered during the month was 4645.
The max. Velocity of the wind was 37 miles per hour. Direction W.S.W., at 3 p.m.

## SEPTEMBER, 1895.

| | | | |
|---|---|---|---|
| Mean amount of Cloud (an overcast sky being indicated by 10·0) | | | 4·9 |
| In the month of September, the highest reading of the Barometer during 47 years, was on the | 15th, | in 1851, and was... | 30·274 |
| The lowest ,, | 2nd, | 1883 ,, ... | 28·323 |
| The highest Temperature | 6th, | 1868 ,, ... | 85·0 |
| The lowest ,, | 25th, | 1885, and 30th, 1888... | 29·8 |
| The highest adopted mean temperature of the month, | | 1865 ... | 59·1 |
| The lowest ,, | | ,, 1863 ... | 50·9 |

### TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

| | | | |
|---|---|---|---|
| Mean barometric pressure .. .. | + | 0·182 | inches |
| Monthly range ,, .. .. | — | 0·288 | ,, |
| Mean of highest temperatures .. .. | + | 6·9 | degrees |
| Mean of lowest ,, .. .. | + | 3·0 | ,, |
| Mean daily range ,, .. .. | + | 3·9 | ,, |
| Adopted mean temperature .. .. | + | 4·4 | ,, |
| Total rainfall .. .. .. | — | 2·501 | inches |

Hoar frost on the 16th and 26th. Thunder on the 3rd and 10th. Lightning on the 3rd, 9th, 23rd, and 24th.

## OCTOBER, 1895.

| Results of Observations taken during the Month. | | Mean for the last 48 years. |
|---|---|---|
| Mean Reading of the Barometer | 29·410 | 29·423 |
| Highest ,, on the 17th | 30·161 | 30·018 |
| Lowest ,, on the 3rd | 28·653 | 28·639 |
| Range of Barometer Readings | 1·508 | 1·379 |
| Highest Reading of a Max. Therm. on the 1st | 70·0 | 64·3 |
| Lowest Reading of a Min. Therm. on the 28th | 17·8 | 28·8 |
| Range of Thermometer Readings | 52·2 | 35·5 |
| Mean of all the Highest Readings | 52·1 | 54·5 |
| Mean of all the Lowest Readings | 35·7 | 41·5 |
| Mean Daily Range | 16·4 | 13·0 |
| Deduced Monthly Mean (from Mean of Max. and Min.) | 42·9 | 47·1 |
| Mean Temperature from Dry Bulb | 42.6 | 47·6 |
| Adopted Mean Temperature | 42·8 | 47·3 |
| Mean Temperature of Evaporation | 40·3 | 45·1 |
| Mean Temperature of Dew Point | 37·3 | 42·7 |
| Mean elastic force of Vapour | 0·223in | 0·275in |
| Mean weight of Vapour in a cub. ft. of air | 2·6gr | 3·1gr |
| Mean additional weight required for saturation | 0·6gr | 0·6gr |
| Mean degree of Humidity (saturation 1·00) | 0·82 | 0·84 |
| Mean weight of a cubic foot of air | 542·5gr | 537·5gr |
| Fall of Rain | 5·767 in | 5·081in |
| Number of days on which Rain fell | 20 | 21·7 |

| | N | NE | E | SE | S | SW | W | NW |
|---|---|---|---|---|---|---|---|---|
| No. of days in the month on which the prevailing wind was | 8 | 5 | 0 | ·0 | 0 | 4 | 10 | 4 |
| Mean Velocity in miles per hour | 5·7 | 4·5 | 0 | 0 | 0 | 6·8 | 11·1 | 6·2 |
| Total No. of miles for each Direction. | 1098 | 535 | 0 | 0 | 0 | 656 | 2671 | 593 |

The total number of miles registered during the month was 5553.
The max. Velocity of the wind was 39 miles per hour. Direction W.S.W., on the 2nd at 5 p.m.

## OCTOBER, 1895.

| | | | |
|---|---|---|---|
| Mean amount of Cloud (an overcast sky being indicated by 10·0) | | | 6·7 |
| In the month of October, the highest reading of the Barometer during 48 years, was on the | 5th, | in 1884, and was .... | 30·306 |
| The lowest ,, | 19th, 1862 | ,, .... | 28·139 |
| The highest Temperature | 9th, 1869 | ,, .... | 72·8 |
| The lowest ,, | 28th, 1895 | ,, .... | 17·8 |
| The highest adopted mean temperature of the month, | | 1861 & '76 | 51·6 |
| The lowest ,, | ,, | 1895.... | 42·8 |

### Table of Differences.

The signs + and — mean respectively above and below the monthly average.

| | | | |
|---|---|---|---|
| Mean barometric pressure .. .. | — | 0·013 | inches |
| Monthly range ,, .. .. | + | 0·129 | ,, |
| Mean of highest temperatures .. .. | — | 2·4 | degrees |
| Mean of lowest ,, .. .. | — | 5·8 | ,, |
| Mean daily range ,, .. .. | + | 3·4 | ,, |
| Adopted mean temperature .. .. | — | 4·5 | ,, |
| Total rainfall .. .. .. | + | 0·686 | inches |

Both the minimum temperature 17·8° on the 28th, and the adopted mean temperature 42·8°, are the lowest recorded for the month of October for the last 48 years. Frost on 14 days. Snow on the 24th, 25th, and 26th. Hail on the 2nd and 3rd. Fog on the 25th. Thunder on the 2nd. Lightning on the 2nd and 25th. A fall of 1¼ inches of rain on the 30th.

## NOVEMBER, 1895.

| Results of Observations taken during the month. | | Mean for the last 48 years. |
|---|---|---|
| Mean Reading of the Barometer ..... | 29·415 | 29·322 |
| Highest ,, on the 1st ..... | 30·121 | 30·054 |
| Lowest ,, on the 10th ..... | 28·401 | 28·559 |
| Range of Barometer Readings ..... | 1·720 | 1·495 |
| Highest Reading of a Max. Therm. on the 16th | 60·2 | 55·8 |
| Lowest Reading of a Min. Therm. on the 26th | 31·8 | 25·5 |
| Range of Thermometer Readings ..... | 28·4 | 30·3 |
| Mean of all the Highest Readings..... | 50·6 | 47·1 |
| Mean of all the Lowest Readings..... | 38·8 | 36·3 |
| Mean Daily Range..... | 11·8 | 10·8 |
| Deduced Monthly Mean (from Mean of Max. and Min.) ..... | 44·3 | 41·4 |
| Mean Temperature from Dry Bulb ..... | 45·0 | 41·6 |
| Adopted Mean Temperature ..... | 44·7 | 41·5 |
| Mean Temperature of Evaporation ..... | 42·8 | 39·3 |
| Mean Temperature of Dew Point ..... | 40·6 | 37·9 |
| Mean elastic force of Vapour ..... | 0·253in | 0·229in |
| Mean weight of Vapour in a cub. ft. of air .... | 2·9gr | 2·6gr |
| Mean additional weight required for saturation | 0·5gr | 0·4gr |
| Mean degree of Humidity (saturation 1·00).. | 0·86 | 0·87 |
| Mean weight of a cubic foot of air ..... | 540·9gr | 544·8gr |
| Fall of Rain ..... | 3·748in | 4·270in |
| Number of Days on which rain fell ..... | 19 | 19·6 |

| No. of days in the month on which the prevailing wind was | N | NE | E | SE | S | SW | W | NW |
|---|---|---|---|---|---|---|---|---|
| | 3 | 4 | 7 | 1 | 3 | 5 | 7 | 0 |
| Mean Velocity in miles per hour | 8·3 | 6·6 | 11·0 | 10·0 | 23·9 | 14·0 | 10·9 | 0 |
| Total No. of miles for each direction | 595 | 630 | 1850 | 242 | 1720 | 1680 | 1836 | 0 |

The total number of miles registered during the month was 8553. The max. Velocity of the wind was 57 miles per hour. Direction S. by E., on the 10th. at 10 p m.

## NOVEMBER.

| | | | |
|---|---|---|---|
| Mean amount of Cloud (an overcast sky being indicated by 10·0) | | | 8·6 |
| In the month of November, the highest reading of the Barometer during 48 years was on the | 12th, in | 1857, and was | 30·350 |
| The lowest ,, | 11th, | 1891 ,, | 27·938 |
| The highest Temperature | 2nd, | 1894 ,, | 62·0 |
| The lowest ,, | 17th, | 1861 ,, | 19·1 |
| The highest adopted mean temperature of the month, | | 1881 | 47·0 |
| The lowest ,, | | ,, 1851 | 36·7 |

### Table of Differences.

The signs + and — mean respectively above and below the monthly average.

| | | | |
|---|---|---|---|
| Mean barometric pressure ... ... | + | 0·093 | inches |
| Monthly range ,, ... ... | + | 0·225 | ,, |
| Mean of highest temperatures ... ... | + | 3·5 | degrees |
| Mean of lowest ,, .. ... | + | 2·5 | ,, |
| Mean daily range ,, ... ... | + | 1·0 | ,, |
| Adopted mean temperature .. ... | + | 3·2 | ,, |
| Total rainfall ... ... ... ... | — | 0·522 | inches |

Frost on 8 days; hail on 4 days; thunder on the 17th; lightning on the 13th; Aurora on the 9th.

## DECEMBER, 1895.

| Results of Observations taken during the Month. | | Mean for the last 48 years. |
|---|---|---|
| Mean Reading of the Barometer ..... | 29·330 | 29·458 |
| Highest ,, on the 27th | 30·021 | 30·075 |
| Lowest ,, on the 16th | 28·540 | 28·594 |
| Range of Barometer Readings ..... | 1·481 | 1·481 |
| Highest Reading of a Max. Therm. on the 5th | 52·5 | 53·0 |
| Lowest Reading of a Min. Therm. on the 19th | 23·0 | 20·1 |
| Range of Thermometer Readings ..... | 29·5 | 32·9 |
| Mean of all the Highest Readings ..... | 44·0 | 43·0 |
| Mean of all the Lowest Readings ..... | 33·3 | 32·9 |
| Mean Daily Range ..... | 10·7 | 10·1 |
| Deduced Monthly Mean (from Mean of Max. and Min.) ..... | 38·7 | 37·9 |
| Mean Temperature from Dry Bulb ..... | 38·6 | 38·6 |
| Adopted Mean Temperature ..... | 38·7 | 38·3 |
| Mean Temperature of Evaporation..... | 37·0 | 36·7 |
| Mean Temperature of Dew Point ..... | 34·7 | 34·9 |
| Mean elastic force of Vapour ..... | 0·202 in | 0·204in |
| Mean weight of Vapour in a cub. ft. of air | 2·3gr | 2·4gr |
| Mean additional weight required for saturation | 0·4gr | 0·4gr |
| Mean degree of Humidity (saturation 1·00 ..) | 0·86 | 0·87 |
| Mean weight of a cubic foot of air ..... | 544·9gr | 548·4gr |
| Fall of Rain ..... | 6·005 in | 5·273in |
| Number of days on which Rain fell ..... | 18 | 18·9 |

| | N | NE | E | SE | S | SW | W | NW |
|---|---|---|---|---|---|---|---|---|
| No. of days in the month on which the prevailing wind was | 0 | 4 | 8 | 1 | 1 | 3 | 13 | 1 |
| Mean Velocity in miles per hour | 0 | 5·7 | 12·4 | 12·1 | 19·8 | 11·6 | 15·2 | 30·8 |
| Total No. of miles for each Direction | 0 | 546 | 2381 | 291 | 476 | 834 | 4728 | 740 |

The total number of miles registered during the month was 9996. The max. Velocity of the wind was 49 miles per hour. Direction N.W. by W., on the 13th at noon.

## DECEMBER, 1895.

| | | | |
|---|---|---|---|
| Mean amount of Cloud (an overcast sky being indicated by 10·0) | | | 8·3 |
| In the Month of December, the highest reading of the Barometer during 48 years, was on the 22nd, in 1849, and was | | | 30·378 |
| The lowest | ,, | 8th, 1886 | ,, .... 27·350 |
| The highest Temperature | | 9th, 1876 | ,, .... 58·1 |
| The lowest | ,, | 24th, 1860 | ,, .... 6·7 |
| The highest adopted mean temperature of the month | | 1857 | .. 44·6 |
| The lowest | ,, | 1878 | ,, .... 30·3 |

### TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

| | | | |
|---|---|---|---|
| Mean barometric pressure | .. .. | — | 0·128 inches |
| Monthly range ,, | .. .. | | average range |
| Mean of highest temperatures | .. .. | + | 1·0 degrees |
| Mean of lowest ,, | .. .. | + | 0·4 ,, |
| Mean daily range ,, | .. .. | + | 0·6 ,, |
| Adopted mean temperatures | .. .. | + | 0·4 ,, |
| Total rainfall .. | .. .. | + | 0·732 inches |

Frost on 22 days. Snow on 5 days. Hail on 6 days. 1·000 inches of rain fell on the 4th. Fog on the 9th. Lightning on the 5th, 6th, and 12th. Aurora on the 7th.

# Summary of Observations FOR 1895.

| | | Mean for the last 48 years. |
|---|---|---|
| Mean Reading of the Barometer ..... | 29·478 | 29·489 |
| Highest ,, on January 27th | 30·222 | 30·277 |
| Lowest ,, on March 28th | 28·194 | 28·265 |
| Range of Barometer Readings ..... | 2·028 | 2·012 |
| Highest Reading of a Max. Therm. on June 25th | 83·2 | 81·6 |
| Lowest Reading of a Min. Therm. on Feb. 7th | 8·0 | 15·2 |
| Range of Thermometer Readings ..... | 75·2 | 66·4 |
| Mean of all the Highest Readings ..... | 55·4 | 54·8 |
| Mean of all the Lowest Readings..... | 39·0 | 40·6 |
| Mean Daily Range ..... | 16·4 | 14·2 |
| Deduced yearly Mean (from Mean of Max. and Min.) ..... | 46·1 | 46·8 |
| Mean Temperature of dry bulb..... | 46·1 | 46·7 |
| Adopted Mean Temperature ..... | 46·2 | 46·7 |
| Mean Temperature of Evaporation ..... | 43·5 | 44·5 |
| Mean Temperature of Dew Point..... | 40·2 | 42·1 |
| Mean elastic force of Vapour ..... | 0·264 in | 0·272in |
| Mean weight of Vapour in a cub. ft. of air | 3·1gr | 3·3gr |
| Mean additional weight required for saturation | 0·8gr | 0·7gr |
| Mean degree of Humidity (saturation 1·00) ... | 0·80 | 0·84 |
| Mean weight of a cubic foot of air ..... | 540·4gr | 539·2gr |
| Total fall of rain in the year ..... | 42·371in | 47·223in |
| Number of days per month on which rain fell | 16·5 | 18·0 |

The Maximum monthly mean height of the Barometer was February, 1891, and was ..... 29·997

The Minimum ,, ,, in December, 1868, and was 28·984

The Maximum yearly mean height of the Barometer was in 1887, and was ..... 29·582

The Minimum ,, ,, in 1866, and was ..... 29·389

## SUMMARY, 1895.

| | |
|---|---|
| The greatest monthly range of the Barometer was in January, 1884, and was | 2·409 |
| The least ,, ,, in July, 1852, and was | 0·505 |
| The highest reading of the Barometer during 48 years was on January 18th, 1882, and was | 30·480 |
| The lowest ,, ,, on December 8th, 1886, and was | 27·350 |
| Extreme range | 3·130 |
| The highest temperature was on June 18th, 1893, and was | 88·7 |
| The lowest ,, ,, January 15th, 1881 | 4·6 |
| The highest adopted mean temperature of a month, July, 1868 | 62·4 |
| The lowest ,, ,, ,, February, 1855, | 28·6 |
| The highest adopted mean temperature of a year 1868 | 49·1 |
| The lowest ,, ,, ,, ,, 1879 | 44·1 |
| The greatest monthly mean weight of vapour in a cubic foot of air .....grains } July, 1852 | 5·1gr |
| The least ,, ,, February, 1855 and 1895 | 1·4gr |
| The greatest fall of rain in a month, was in October, 1870, and was | 13·437in |
| The least ,, ,, ,, March, 1852 | 0·047 |
| The greatest number of days on which rain fell in one month ..... } July, 1861, Dec. 1868 | 31 |
| The least ,, ,, ,, March, 1852 | 3 |

### SUMMARY OF WIND.

| No of days in the year on which the prevailing wind was ..... | N | NE | E | SE | S | SW | W | NW |
|---|---|---|---|---|---|---|---|---|
| | 55 | 37 | 46 | 3 | 28 | 54 | 128 | 14 |
| Mean Velocity in miles per hour ..... | 8·8 | 6·2 | 10·6 | 11·8 | 10·5 | 9·2 | 10·4 | 10·1 |
| Total No. of miles for each Direction ..... | 11586 | 5524 | 11668 | 848 | 7037 | 11917 | 32077 | 3408 |

The total No. of miles registered during the year was 84065.

The max. Velocity of the wind was 49 miles per hour. Direction N.W. by W., at Noon, on December 13th.

# DATES OF OCCASIONAL PHENOMENA.

| 1895. | Frost. | Hoar Frost. | Snow. | Hail. |
|---|---|---|---|---|
| January | 1—19, 21—31 | | 2,6,7,9,13,14,17,22,24,25,27,29,30,31 | 3, 20, 23, 24, 27 |
| February | 1—28 | 20, 22 | 1—3, 5, 6, 17, 18, 21, 25, 26, 28 | |
| March | 1—8, 11—18, 26, 27, 31 | 3, 12 | 4, 5, 6 | 25, 31 |
| April | 1—5, 7, 8, 12—15, 30 | 12 | 3 | 24 |
| May | 2, 3 | | | |
| June | | | | |
| July | | | | |
| August | | | | |
| September | | 16, 26 | | |
| October | 16—20, 22—30 | 25, 29 | 24, 25, 26 | 2, 3 |
| November | 10, 15, 17—19, 23, 24, 27 | | | 12, 13, 14, 17 |
| December | 1, 6—14, 16, 18—28 | 20, 21 | 6, 7, 12, 24, 28 | 1, 3, 5, 6, 7, 12 |

# DATES OF OCCASIONAL PHENOMENA.

*(Continued.)*

| 1895 | Heavy Rain | Fog | Thunder | Lightning | Lunar Halo | Solar Halo |
|---|---|---|---|---|---|---|
| January | | | 27 | 24 | | |
| February | | 23, 28 | | | | |
| March | 23, 24 | 7 | | | | |
| April | 5 | | 21, 24 | 24 | 4 | |
| May | | | 24, 25, 30 | 25, 30 | 5, 7, 8 | |
| June | 1, 26, 27 | | 1, 26, 27, 28, 29, 30 | 1, 29, 30 | | |
| July | 11, 18, 20, 25 | | 1, 2, 3, 7, 21, 26 | 1, 2, 21, 26 | | |
| August | 13, 26 | | 3,10,12,13,17,23,27 | 10, 22, 23 | | |
| September | 6 | | 3, 10 | 3, 9, 23, 24 | | |
| October | 5, 30 | 25 | 2 | 2, 25 | | |
| November | | | 17 | 13 | | |
| December | 4, 12, 28, 29 | 9 | | 5, 6, 12 | | |

Aurora Borealis, February 15, at 10 p.m.
,, ,, ,, 24, at 9-45 p.m.
,, ,, March 13, at 9-15 p.m.
,, ,, April 23, at 9 p.m.
,, ,, November 9, at 8 p.m.
,, ,, December 7, at 7 p.m.

# SUMMARY OF SOLAR OBSERVATIONS.

Number of days of Observation in Each Month.

| 1895. | Recorded Sunshine. | Amount of Sunshine expressed in hours. | Number of Sun Drawings 10½ inches to diameter. | Solar Spectrum Photographs. |
|---|---|---|---|---|
| January ..... | 19 | 56·8 | 11 | |
| February ..... | 24 | 83·8 | 9 | |
| March ..... | 23 | 67·0 | 4 | |
| April ..... | 25 | 143·7 | 11 | |
| May ..... | 29 | 222·1 | 15 | |
| June ..... | 29 | 248·6 | 18 | 27 |
| July ..... | 29 | 177·2 | 17 | 36 |
| August ..... | 29 | 136·2 | 11 | 22 |
| September ... | 29 | 170 0 | 17 | 42 |
| October ..... | 18 | 94·5 | 12 | 14 |
| November ... | 17 | 42·3 | 8 | 5 |
| December ... | 13 | 19·8 | 7 | 2 |
| Totals ..... | 284 | 1462 0 | 140 | 148 |

*The figures express, in hundredths of a day, the Greenwich Civil time at which the drawing was made.*

| 1895. | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ·52 | | | ·40 | ·71 | | | | | | | |
| 2 | | | ·40 | | ·42 | | | ·75 | ·38 | | | ·53 |
| 3 | ·41 | | | ·66 | ·42 | | | | | | | ·42 |
| 4 | ·45 | ·42 | ·40 | ·47 | ·43 | ·46 | ·73 | ·61 | ·41 | ·44 | | |
| 5 | | ·43 | | | ·51 | | ·39 | ·65 | | | | |
| 6 | | | | | ·41 | ·41 | ·33 | | ·46 | ·51 | | |
| 7 | ·48 | | | ·44 | ·67 | ·46 | ·35 | ·71 | ·54 | ·66 | | |
| 8 | ·42 | | | | ·67 | ·46 | ·34 | ·46 | ·42 | | | |
| 9 | | ·51 | | ·44 | | ·41 | ·44 | | ·42 | | | |
| 10 | ·43 | | | | ·30 | ·46 | ·38 | | ·44 | ·44 | | ·41 |
| 11 | ·48 | ·44 | | ·72 | ·34 | | | | | ·42 | ·38 | |
| 12 | | ·40 | | | | ·71 | ·69 | | | | ·46 | |
| 13 | | ·43 | ·40 | | | ·46 | ·40 | ·73 | ·41 | | | |
| 14 | | | | ·51 | | ·71 | | | | | | |
| 15 | | | | ·41 | ·50 | ·40 | ·47 | | ·65 | | | ·48 |
| 16 | | ·44 | ·66 | ·59 | | ·47 | | | | ·43 | | |
| 17 | | | | | | | | | | ·39 | ·47 | |
| 18 | ·44 | | | | | | ·44 | ·36 | | ·43 | ·41 | ·44 |
| 19 | | | | | | ·61 | | | ·62 | ·41 | ·42 | |
| 20 | | ·44 | | | | ·59 | | | ·40 | | | |
| 21 | | | | | | ·48 | | ·34 | | | | |
| 22 | ·50 | | | | | | ·44 | | | | | ·42 |
| 23 | | | | ·71 | ·39 | | ·39 | ·39 | | ·42 | ·40 | |
| 24 | | | | | | ·65 | | | | | ·52 | |
| 25 | | | | | | ·42 | | | ·66 | ·52 | ·45 | |
| 26 | ·41 | | | | | ·34 | ·78 | | ·46 | | | ·44 |
| 27 | | ·46 | | | ·36 | | | | ·41 | ·48 | | |
| 28 | ·42 | | | ·50 | ·34 | ·76 | ·38 | | ·54 | | | |
| 29 | | | | | | | ·43 | ·48 | ·45 | | | |
| 30 | | | | | ·51 | | ·35 | ·67 | ·47 | | | |
| 31 | | | | | | | | | | | | |

# TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY.

| MONTH. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January - - - | 3·9 | 0 | 4·4 | 2·2 | 0·4 | 0 | 1·4 | 2·6 | 0·6 | 0 | 1·2 | 0 | 0 | 0 | 0·2 | 0 | 0 |
| February - - - | 0 | 0·4 | 1·6 | 3·9 | 4·7 | 0 | 0·8 | 7·5 | 3·8 | 2·4 | 6·5 | 7·5 | 4·5 | 6·0 | 2·8 | 8 7 | 1·4 |
| March - - - | 3·0 | 4 2 | 4·8 | 6·7 | 2·3 | 0 | 0 | 2·7 | 1·6 | 1·2 | 0·8 | 2.5 | 8·7 | 0 | 0 | 2·3 | 4·3 |
| April - - - | 5·4 | 7·7 | 2·4 | 7·4 | 0·8 | 0 | 9·4 | 0·3 | 10·7 | 5·6 | 10·5 | 4·3 | 5·0 | 10·8 | 12·5 | 12·5 | 0·6 |
| May - - - | 2·5 | 12·9 | 11·4 | 7·0 | 12·7 | 14·1 | 13·9 | 12·0 | 7·0 | 14·0 | 13·8 | 0 | 1·0 | 1·5 | 7·3 | 14·4 | 0·4 |
| June - - - | 0·8 | 0 | 2·5 | 5·5 | 7·5 | 10·9 | 14·9 | 8·4 | 9 8 | 12·7 | 8·5 | 12·7 | 10·7 | 6·8 | 14·7 | 15·4 | 3·7 |
| July - - - | 2·2 | 2·6 | 3·7 | 6·8 | 12·7 | 12·0 | 13·4 | 10·7 | 9·7 | 8·8 | 0·4 | 7·6 | 7·7 | 6·3 | 5·8 | 0 | 1·7 |
| August - - - | 0 | 6·2 | 1·0 | 4·8 | 5·1 | 1·0 | 5·5 | 5·7 | 3·0 | 3·4 | 6·3 | 4·9 | 4·1 | 8·8 | 0·8 | 0 | 3·4 |
| September - - - | 7·9 | 10·0 | 0·7 | 4·1 | 0 | 5·4 | 5·3 | 6·5 | 8·3 | 1·9 | 3·7 | 4·2 | 10·4 | 0·3 | 7·2 | 0·5 | 0·8 |
| October - - - | 1·7 | 0·4 | 0 | 7·0 | 0 | 7·4 | 4·9 | 0 | 1·8 | 5·3 | 6·4 | 0 | 0 | 0 | 0 | 8·8 | 5·7 |
| November - - - | 1·2 | 0 | 0 | 0 | 0 | 2·4 | 0 | 0·9 | 0·2 | 0·3 | 4·0 | 5·3 | 5·3 | 0·5 | 0 | 0 | 3·4 |
| December - - - | 1·0 | 0·1 | 3·5 | 0 | 0 | 2·4 | 1·0 | 0 | 0 | 1·3 | 0 | 0 | 2·5 | 0 | 1·9 | 0 | 1·4 |

# TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY.

*(Continued.)*

| MONTH. | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | Monthly Total. | Per centage each month. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January - - | 2·5 | 0 | 0 | 5·8 | 3·8 | 6·4 | 0 | 3·1 | 4·8 | 0·6 | 6·7 | 0 | 4·8 | 1·4 | 56·8 | 21·9 |
| February - - | 0 | 1·7 | 3·6 | 3·2 | 0·7 | 0·3 | 1·7 | 3·5 | 0 | 6·0 | 0·6 | 0 | 0 | 0 | 83·8 | 30·1 |
| March - - | 5·3 | 0 | 0·3 | 0 | 3·4 | 0 | 1·7 | 0·7 | 6·1 | 0·5 | 0 | 0·5 | 0·6 | 2·8 | 67·0 | 18·3 |
| April - - | 0 | 3·6 | 6·6 | 0 | 0 | 6·6 | 3·2 | 0·3 | 0 | 1·0 | 7·4 | 5·3 | 3·8 | 0 | 143·7 | 34·6 |
| May - - | 4·3 | 5·7 | 0·5 | 0 | 0·3 | 6·0 | 3·4 | 1·5 | 10·0 | 13·2 | 7·9 | 8·5 | 10·3 | 4·6 | 222·1 | 46·1 |
| June - - - | 1·2 | 12·5 | 13·8 | 13·8 | 7·0 | 4·1 | 9·6 | 11·2 | 9·3 | 5·6 | 5·2 | 3·1 | 6·7 | 0 | 248·6 | 50·3 |
| July - - - | 5·8 | 5·7 | 2·7 | 3·7 | 7·5 | 11·0 | 0·8 | 0 | 2·0 | 3·3 | 2·4 | 8·1 | 7·6 | 4·5 | 177·2 | 35·7 |
| August - - | 9·8 | 2·5 | 4·0 | 8·2 | 1·5 | 7·9 | 10·0 | 3·1 | 0·6 | 4·9 | 1·7 | 4·8 | 6·7 | 6·5 | 136·2 | 30·4 |
| September - | 3·1 | 7·8 | 10·0 | 9·8 | 7·5 | 8·8 | 5·8 | 2·9 | 7·2 | 7·4 | 7·6 | 7·7 | 7·2 | 0 | 170·0 | 45·1 |
| October - - | 6·9 | 7·3 | 0 | 0 | 7·0 | 8·7 | 0 | 3·4 | 3·6 | 5·9 | 0 | 2·3 | 0 | 0 | 94·5 | 28·6 |
| November - | 2·8 | 2·4 | 0 | 0 | 0·6 | 4·4 | 4·4 | 5·4 | 1·9 | 0 | 0 | 0 | 0 | 0 | 42·3 | 16·1 |
| December - - | 1·2 | 0 | 0 | 0 | 1·3 | 0 | 0 | 0 | 0·4 | 1·8 | 0 | 0 | 0 | 0 | 19·8 | 8·2 |

# MONTHLY TABLES FOR EACH HOUR OF RECORDED SUNSHINE

| Local apparent time. | 4-5 | 5-6 | 6-7 | 7-8 | 8-9 | 9-10 | 10-11 | 11-2 | 12-1 | 1-2 | 2-3 | 3-4 | 4-5 | 5-6 | 6-7 | 7-8 | 8-9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January - - | 0 | 0 | 0 | 0 | 1·6 | 5·7 | 10·7 | 10·2 | 9·0 | 8·1 | 8·8 | 2·7 | 0 | 0 | 0 | 0 | 0 |
| February - - | 0 | 0 | 0 | 0·7 | 5·2 | 9·0 | 12·6 | 13·5 | 12·1 | 11·3 | 9·7 | 8·0 | 1·7 | 0 | 0 | 0 | 0 |
| March - - - | 0 | 0 | 0 | 0·7 | 4·8 | 7·7 | 6·1 | 7·4 | 7·9 | 7·2 | 9·0 | 8·5 | 5·6 | 2·1 | 0 | 0 | 0 |
| April - - - | 0 | 0 | 2·6 | 5·9 | 10·4 | 13·8 | 14·4 | 15·2 | 14·3 | 12·8 | 13·2 | 14·3 | 13·9 | 10·6 | 2·3 | 0 | 0 |
| May - - - | 0·5 | 8·8 | 14·3 | 16·6 | 18·0 | 18·3 | 17·2 | 17·3 | 17·0 | 16·4 | 18·5 | 16·3 | 15·4 | 14·0 | 11·5 | 2·0 | 0 |
| June - - - | 1·9 | 10·2 | 13·9 | 14·9 | 15·3 | 17·1 | 20·5 | 18·9 | 19·1 | 19·2 | 18·8 | 19·0 | 18·4 | 16·5 | 15·9 | 9·0 | 0 |
| July - - - | 0·2 | 4·4 | 9·1 | 12·0 | 14·4 | 14·0 | 14·4 | 14·8 | 14·8 | 14·0 | 14·4 | 15·1 | 14·2 | 13·0 | 7·4 | 1·0 | 0 |
| August - - | 0 | 0·5 | 4·3 | 6·7 | 10·7 | 9·0 | 11·0 | 12·1 | 14·6 | 15·0 | 14·0 | 13·9 | 12·7 | 9·7 | 2·0 | 0 | 0 |
| September - - | 0 | 0 | 1·5 | 6·0 | 13·7 | 16·3 | 19·9 | 21·7 | 21·5 | 19·0 | 18·3 | 15·4 | 10·8 | 5·9 | 0 | 0 | 0 |
| October - - | 0 | 0 | 0 | 1·7 | 8·1 | 9·9 | 10·0 | 12·4 | 13·3 | 12·6 | 11·6 | 10·7 | 3·9 | 0·3 | 0 | 0 | 0 |
| November - - | 0 | 0 | 0 | 0 | 1·0 | 2·1 | 5·0 | 7·6 | 8·3 | 7·1 | 6·6 | 3·9 | 0·7 | 0 | 0 | 0 | 0 |
| December - - | 0 | 0 | 0 | 0 | 0 | 1·0 | 3·7 | 4·4 | 3·6 | 4·3 | 2·6 | 0·2 | 0 | 0 | 0 | 0 | 0 |
| Total - - | 2·6 | 23·9 | 45·7 | 65·2 | 103·2 | 123·9 | 145·5 | 155·5 | 155·5 | 147·0 | 145·5 | 128·0 | 97·3 | 72·1 | 39·1 | 12·0 | 0 |

## OBSERVATIONS OF UPPER CLOUDS (CIRRUS.)

| Date. 1895 | | G. M. T. | Cloud. | | Wind. | | Direction of Lower Clouds. |
|---|---|---|---|---|---|---|---|
| | | | Direction | V'locity (0—6). | Direction. | Force (0—12). | |
| January | 20 | 9am | E b S | 2 | NE | 2 | NE |
| February | 26 | 8am | NW | 3 | W b S | 2 | W |
| ,, | 27 | 10am | N | 2 | NNW | 2 | NW |
| March | 1 | 8-30am | W b N | 2 | W | 4 | W |
| ,, | 4 | 11 30am | N | 3 | N | 4 | NE b N |
| ,, | 9 | 10am | N b W | 2 | NE b E | 1 | ENE |
| ,, | 12 | 9am | SW | 3 | NNE | 1 | |
| ,, | 18 | 2pm | NE b E | 2 | W b S | 4 | WSW |
| ,, | 21 | 6pm | SE b E | 2 | W b S | 4 | WSW |
| ,, | 22 | 9am | SE | 2 | W b S | 1 | W |
| ,, | 27 | 12-30pm | SW | 2 | E b S | 3 | W |
| April | 2 | 3-50pm | SW | 2 | ENE | 2 | NE |
| ,, | 9 | 5-30pm | SW | 2 | WSW | 1 | W |
| ,, | 10 | 3-10pm | S | 3 | WSW | 5 | WSW |
| ,, | 14 | 9-10am | NW | 1 | NE | 2 | NW |
| ,, | 19 | 4pm | NW b W | 2 | W b S | 2 | SW |
| ,, | 23 | 4-50pm | SW | 2 | WSW | 3 | W |
| ,, | 24 | 5pm | S b E | 3 | S b E | 5 | SE |
| ,, | 30 | 10am | WNW | 2 | SW | 2 | SW |
| May | 2 | 11-30am | NW | 2 | W | 2 | NW |
| ,, | 3 | 9-10am | NW | 3 | E | 1 | |
| ,, | 4 | 6-45pm | N | 1 | ESE | 1 | NW |
| ,, | 5 | 9-45am | N b W | 1 | NE | 1 | |
| ,, | 7 | 4pm | ENE | 2 | E | 3 | |
| ,, | 8 | 9am | ENE | 2 | NE | 2 | NE |
| ,, | 15 | Noon | NW | 2 | WNW | 5 | W |
| ,, | 31 | 2pm | NW | 2 | S | 5 | S |
| June | 8 | 9 10am | W | 2 | SW b W | 1 | W |
| ,, | 9 | 8-30am | S | 2 | WSW | 1 | W |
| ,, | 10 | 7-30am | S | 3 | WNW | 1 | W |
| ,, | 12 | 10am | W | 2 | NW b N | 2 | NW |
| ,, | 16 | Noon | W | 3 | W b S | 2 | SW |
| ,, | 18 | 5-30pm | SSW | 2 | W b N | 1 | W |
| ,, | 19 | 2pm | S | 2 | WSW | 2 | W |
| ,, | 20 | 5-30pm | W b N | 2 | W | 2 | SW |
| ,, | 21 | 2pm | NW | 3 | WSW | 2 | W |
| ,, | 24 | 5-45pm | WNW | 2 | SW | 2 | SW |
| ,, | 25 | 5-30pm | W b N | 2 | NW b W | 1 | NW |
| ,, | 26 | 7-30am | S b E | 2 | N | 1 | |

## OBSERVATIONS OF UPPER CLOUDS (*Continued*).

| Date. 1895. | G. M. T. | Cloud. | | Wind. | | Direction of Lower Clouds. |
|---|---|---|---|---|---|---|
| | | Direction. | V'locity (0—6). | Direction. | Force (0—12). | |
| July 5 | 9am | NNW | 2 | W b S | 1 | W |
| ,, 5 | 2-50pm | NW | 3 | WNW | 3 | W |
| ,, 8 | 12-30 pm | S | 3 | S b W | 4 | S b W |
| ,, 9 | 8am | SW b W | 2 | SW | 1 | SW b S |
| ,, 10 | Noon | SW | 3 | W | 3 | WNW |
| August 2 | 2pm | SSE | 2 | WSW | 3 | W |
| ,, 8 | Noon | SW | 2 | SW | 1 | SW |
| ,, 12 | 5pm | NW | 2 | SW | 3 | SW |
| ,, 17 | 7-30pm | W b S | 2 | SW b W | 0 | SW |
| ,, 18 | 4pm | S | 3 | S | 2 | SW b S |
| ,, 31 | 8am | SW | 3 | W b S | 3 | SW b S |
| Sept. 1 | 8-30am | S | 3 | SW b W | 1 | |
| ,, 4 | 11-30 am | NE | 3 | SW | 3 | SW |
| ,, 6 | 7-30am | SW | 3 | NE | 0 | W |
| ,, 8 | 9-15am | W | 2 | SW | 1 | SW |
| ,, 13 | 7-30am | NW | 3 | WNW | 1 | NW |
| ,, 19 | 7-30am | SW | 2 | NW b W | 0 | SW |
| ,, 24 | 10-20am | SW b S | 3 | ESE | 0 | S |
| Oct. 5 | 9am | ENE | 3 | SW b S | 2 | SW |
| ,, 7 | 8-45am | WNW | 2 | SW | 2 | W |
| ,, 16 | 3-30pm | W | 3 | N | 1 | NE |
| Nov. 7 | 9am | W | 3 | W b S | 1 | |
| ,, 11 | 3pm | SW b W | 2 | SW b S | 1 | SW |
| ,, 13 | 9-20am | NW | 2 | W | 5 | W |
| ,, 18 | 1-45pm | SW | 3 | S | 1 | |
| ,, 19 | 1-40pm | SE | 3 | E b S | 3 | NE |
| ,, 22 | 2pm | SW | 3 | WNW | 2 | W |
| Dec. 1 | 1pm | NE | 2 | WSW | 3 | SW |
| ,, 2 | 9-30am | NE | 2 | WSW | 1 | SW |
| ,, 13 | 2pm | NNW | 3 | NW b W | 7 | W |

# Monthly Magnetical Observations

## taken at the

# College Observatory, Stonyhurst, 1895.

The Horizontal, Vertical, and Total Forces are calculated to English measure; one foot, one second of mean solar time, and one grain being assumed as the units of space, of time, and of mass.

The Vertical and Total Forces are obtained from the absolute measures of the Horizontal Force, and of the Dip.

In the observations of Deflection and Vibration, taken each month for absolute measure of Horizontal Force, the same magnet has always been employed.

The moment of inertia of the magnet with its stirrup, for different degrees of temperature, and the co-efficients in the corrections required for the effects of temperature and of terrestrial magnetic induction on the magnetic moment of the magnet, were determined at the Kew Observatory by the late Mr. Welsh.

The moment of inertia of the magnet with its stirrup, using the grain and foot as the units of mass and of linear measure is 5·27303. Its rate of increase for increase of temperature is 0·00073 for every 10° of Fahr.

The weight of the magnet with its stirrup is approximately 825 grains, and the length of the magnet is nearly 3·94 inches. The moment of inertia was determined, independently of the weight and dimensions, by the method of vibration, with and without a known increase of the moment of inertia.

The temperature corrections have been obtained from the formula $q(t°—32°) + q'(t°—32°)2$, where t° is the observed temperature and 32° Fahr. the adopted standard temperature. The values of the co-efficient $q$ and $q'$ are respectively 0·0001128 and 0·000000436

The induction co-efficient $\mu$ is 0 000244.

The correction for error of graduation of the Deflection bar at 1·0 foot is + 0·00004 ft. at 1·3 + 0·000064 ft.

The observed times of vibration are entered in the Table without corrections.

The time of one vibration has been obtained each month from the mean of twelve determinations of the time of 100 vibrations.

The angles of deflection are each the mean of two sets or readings.

In deducing from these observations the ratio and product of the magnetic moment $m$ of the magnet, and the earth's horizontal magnetic intensity X, the induction and temperature corrections have always been applied, and the observed time of vibration has been corrected for the effect of torsion of the suspending thread; but no correction has been required for the rate of the chronometer, or for the arc of vibration, the former having been always under 1·5s and the latter never over 50′.

The average deflection of the magnet caused by a twist of the torsion circle through 90° has been about 9′·7 of arc.

In the calculations of the ratio $\frac{m}{X}$, the third and subsequent terms of the series $1 + \frac{P}{r2} + \frac{Q}{r4}$ + &c., have always been omitted.

The value of the constant P was found to be—0·00369.

The Declination observations have been taken once a week

# OBSERVATIONS OF DECLINATION AND DIP.

| 1895 Month | G.M.T. Civil Day | West Declination | | Magnetic Dip. | | |
|---|---|---|---|---|---|---|
| | | Observations. | Monthly Mean. | Needle | Dip. | G.M.T. Civil Day |
| | D. H. M. | ° ′ | ° ′ | | ° ′ | D. H. M. |
| Jan. | 7 16 0 | 18 39·3 | 18 37·7 | 1 | 68 59·8 | 23 11 5 |
| | 14 15 55 | 18 37·8 | | 3 | 69 9·2 | ,, 11 40 |
| | 21 16 0 | 18 39·0 | | | | |
| | 28 16 0 | 18 34·7 | | | | |
| Feb. | 4 16 5 | 18 40·1 | 18 39·9 | 1 | 68 55·4 | 19 16 0 |
| | 11 15 55 | 18 37·6 | | 3 | 69 8·3 | ,, 16 32 |
| | 18 15 45 | 18 41·8 | | | | |
| | 25 16 0 | 18 40 3 | | | | |
| March | 4 16 15 | 18 41·2 | 18 39·0 | 1 | 68 59·9 | 13 16 0 |
| | 11 15 50 | 18 40·5 | | 3 | 69 5·7 | ,, 16 30 |
| | 18 16 30 | 18 35·4 | | | | |
| April | 1 16 0 | 18 40·0 | 18 40·3 | 1 | 68 51·2 | 16 12 50 |
| | 8 16 5 | 18 41·1 | | 3 | 69 4·0 | ,, 13 18 |
| | 15 16 10 | 18 37·9 | | | | |
| | 22 16 5 | 18 41·4 | | | | |
| | 29 16 5 | 18 40·9 | | | | |
| May | 6 15 45 | 18 38·8 | 18 38·5 | 1 | 68 51·7 | 16 12 38 |
| | 13 16 0 | 18 38·7 | | 3 | 69 5·5 | ,, 13 5 |
| | 20 15 45 | 18 38·6 | | | | |
| | 27 16 0 | 18 37·9 | | | | |
| June | 17 16 10 | 18 39·8 | 18 39·2 | 1 | 68 56·9 | 18 10 55 |
| | 24 16 10 | 18 38·6 | | 3 | 69 2·2 | ,, 11 38 |
| July | 1 16 5 | 18 39·9 | 18 40·4 | 1 | 68 57·0 | 16 16 3 |
| | 8 16 10 | 18 41·4 | | 3 | 69 0·5 | ,, 16 33 |
| | 15 16 8 | 18 40·8 | | | | |
| | 29 15 10 | 18 39·3 | | | | |

# OBSERVATIONS OF DECLINATION AND DIP.

*(Continued.)*

| 1895 Month | G.M.T. Civil Day | West Declination | | Magnetic Dip. | | |
|---|---|---|---|---|---|---|
| | | Observations. | Monthly Mean. | Needle | Dip. | G.M.T. Civil Day |
| | D. H. M. | ° ′ | ° ′ | | ° ′ | D. H. M. |
| Aug. | 5 16 20 | 18 38·4 | 18 36·7 | 1 | 68 56·9 | 16 14 30 |
| | 12 15 50 | 18 35·3 | | 3 | 69 10·0 | ,, 16 52 |
| | 19 17 50 | 18 34·3 | | | | |
| | 26 16 10 | 18 38·6 | | | | |
| Sept. | 2 16 10 | 18 35·9 | 18 35·1 | 1 | 68 52·1 | 25 16 55 |
| | 9 16 15 | 18 32·5 | | 3 | 68 56·5 | ,, 17 40 |
| | 30 16 10 | 18 36·8 | | | | |
| Oct. | 7 16 10 | 18 34·1 | 18 36·1 | 1 | 68 59·7 | 16 15 48 |
| | 14 16 5 | 18 34·9 | | 3 | 69 2·6 | ,, 16 13 |
| | 22 15 45 | 18 35·0 | | | | |
| | 28 16 10 | 18 40·5 | | | | |
| Nov. | 4 15 46 | 18 43·8 | 18 37·7 | 1 | 68 50·1 | 15 9 30 |
| | 11 16 10 | 18 35·0 | | 3 | 68 59·3 | ,, 10 3 |
| | 25 16 10 | 18 34·3 | | | | |
| Dec. | 2 15 45 | 18 34·0 | 18 33 5 | 1 | 68 47·5 | 20 10 35 |
| | 9 16 15 | 18 35·8 | | 3 | 68 57·0 | ,, 11 10 |
| | 16 15 55 | 18 34·7 | | | | |
| | 23 16 15 | 18 32·3 | | | | |
| | 30 16 0 | 18 30·6 | | | | |
| Yearly Mean. | | | 18 37·8 | | 68 59·2 | |

## OBSERVATIONS OF VIBRATIONS AND DEFLECTIONS FOR ABSOLUTE MEASURE OF MAGNETIC FORCE.

| 1895 Month. | G. M. T. (Civil Day). | Temp. | Time of one vibration | G. M T. | Temp. | Observed Deflection at 1·0 ft. / at 1·3 ft. | Value of m |
|---|---|---|---|---|---|---|---|
| | D. H. M. | ° | | D. H. M. | ° | ° ′ | |
| Jan. | 21 9 42 | 36·7 | 5·9773 | 21 {11 3<br>{11 6 | 43·8<br>43·6 | 12 2·3<br>5 27·1 | 0·39004 |
| Feb. | 19 9 40 | 34·4 | 5·9730 | 19 {10 59<br>{11 1 | 38·0<br>37·6 | 12 3·8<br>5 28·2 | 0·39041 |
| Mar. | 13 10 37 | 46·9 | 5·9820 | 13 {11 56<br>{11 59 | 48·7<br>49·0 | 12 5·5<br>5 28·7 | 0·39100 |
| Apr. | 16 9 51 | 48·5 | 5·9766 | 16 {11 55<br>{11 55 | 53·4<br>53·2 | 12 4·0<br>5 29·0 | 0·39115 |
| May | 16 9 22 | 47·7 | 5·9685 | 16 {10 33<br>{10 27 | 50·0<br>50·0 | 12 6·4<br>5 31·5 | 0·39222 |
| June | 17 10 56 | 56·3 | 5·9774 | 17 {12 3<br>{12 10 | 58·5<br>58·4 | 12 1·3<br>5 26·6 | 0·39062 |
| July | 16 10 22 | 59·0 | 5·9863 | 16 {11 28<br>{11 26 | 59·0<br>59·0 | 12 2·8<br>5 27·3 | 0·39050 |
| Aug. | 16 9 56 | 60·5 | 5·9843 | 16 {10 58<br>{10 58 | 63·6<br>63·7 | 11 59·6<br>5 25·9 | 0·38997 |
| Sept. | 25 11 0 | 66·7 | 5·9936 | 25 {12 9<br>{12 13 | 69·2<br>69·4 | 11 58·9<br>5 25·8 | 0·38963 |
| Oct. | 16 10 18 | 56·3 | 5·9931 | 16 {11 18<br>{11 18 | 57·6<br>58·0 | 11 59·9<br>5 26·4 | 0·38925 |
| Nov. | 14 10 35 | 51·5 | 5·9856 | 14 {11 32<br>{11 31 | 52·5<br>52·5 | 12 0·3<br>5 26·2 | 0·38951 |
| Dec | 19 9 54 | 37·4 | 5·9726 | 19 {10 45<br>{10 46 | 38·0<br>38·0 | 12 2·4<br>5 27·2 | 0·39014 |

# MAGNETIC INTENSITY.

| 1895 | BRITISH UNITS. Horizontal force. | Vertical force. | Total Force. | C. G. S. UNITS. Horizontal Force. | Vertical Force. | Total Force. |
|---|---|---|---|---|---|---|
| Jan. .. | 3·7223 | 9·7349 | 10·4223 | 0·1716 | 0·4489 | 0·4806 |
| Feb. .. | 3·7203 | 9·7074 | 10·3959 | 0·1715 | 0·4476 | 0·4793 |
| Mar. .. | 3·7117 | 9·6926 | 10·3789 | 0·1711 | 0·4469 | 0·4786 |
| April .. | 3·7153 | 9·6583 | 10·3481 | 0·1713 | 0·4453 | 0·4771 |
| May .. | 3·7112 | 9·6559 | 10·3446 | 0·1711 | 0·4452 | 0·4770 |
| June .. | 3·7245 | 9·6987 | 10·3892 | 0·1717 | 0·4472 | 0·4790 |
| July .. | 3·7151 | 9·6677 | 10·3570 | 0·1713 | 0·4458 | 0·4775 |
| Aug. .. | 3·7232 | 9·7282 | 10·4163 | 0·1717 | 0·4485 | 0·4803 |
| Sept. .. | 3·7196 | 9·6419 | 10·3346 | 0·1715 | 0·4446 | 0·4765 |
| Oct. .. | 3·7176 | 9·6940 | 10·3823 | 0·1714 | 0·4470 | 0·4787 |
| Nov. .. | 3·7222 | 9·6519 | 10·3448 | 0·1716 | 0·4450 | 0·4770 |
| Dec. .. | 3·7256 | 9·6406 | 10·3355 | 0·1718 | 0·4445 | 0·4766 |
| Means | 3·7191 | 9·6810 | 10·3708 | 0·1715 | 0·4464 | 0·4782 |

# HORIZONTAL MAGNETIC DIRECTION.

Horizontal Magnetic Direction from daily measures of the continuous Curves West of North.

| 1895. | Mean of the highest daily readings. (a) | Mean of the lowest daily readings (b) | Means of $a$ and $b$. (c) | Means of daily readings at 4a.m. & 4p.m. (d) | Difference $c-d$. | Difference of a and b, or Mean daily range. | Highest Reading of the Month. | Lowest reading of the month. | Monthly Range. |
|---|---|---|---|---|---|---|---|---|---|
| | 18°+ | | | | | | 18°+ | | |
| | ′ | ′ | ′ | ′ | ′ | ′ | ′ | ′ | ′ |
| January .. | 45·5 | 30·9 | 38·2 | 40·5 | + 2·3 | 14·6 | 51·2 | 6·2 | 45·0 |
| February .. | 47·3 | 29·2 | 38·3 | 40·5 | + 2·2 | 18·1 | 63·7 | 10·7 | 53·0 |
| March .. | 48·0 | 29·2 | 38·6 | 39·5 | + 0·9 | 18·8 | 55·7 | 10·2 | 45·5 |
| April .. | 47·0 | 28·7 | 37·9 | 38·5 | + 0·6 | 18·3 | 55·2 | 11 2 | 44·0 |
| May .. | 44.6 | 27·2 | 35·9 | 36·0 | + 0·1 | 17·4 | 56·7 | 19·2 | 37·5 |
| June .. | 43·2 | 25·4 | 34·3 | 35·6 | + 1·3 | 17·8 | 46·2 | 18·7 | 27·5 |
| July .. | 42·3 | 25·4 | 33·9 | 35·0 | + 1·1 | 16·9 | 47·7 | 14·7 | 33·0 |
| August .. | 41·5 | 27·1 | 34·3 | 33·9 | — 0·4 | 14·4 | 45·2 | 18 7 | 26·5 |
| September .. | 41·3 | 25·1 | 33·2 | 33·2 | 0·0 | 16 2 | 48·7 | 15·2 | 33·5 |
| October .. | 41·0 | 22·1 | 31·6 | 33·2 | + 1·6 | 18·9 | 48·7 | 6·7 | 42·0 |
| November .. | 37·6 | 21·6 | 29 6 | 32·5 | + 2·9 | 16·0 | 45·7 | 1·2 | 44·5 |
| December .. | 36·8 | 24·5 | 30·7 | 32·1 | + 1·4 | 12·3 | 46 2 | 8·2 | 38·0 |
| Means .. | 43·0 | 26·4 | 34·7 | 35·9 | + 1·2 | 16·6 | 50·9 | 11·7 | 39·2 |
| Correction for diurnal range | | | | —3 | | | | | |
| Mean for the year | | | | 18° 35′·6 | | | | | |

# HORIZONTAL MAGNETIC FORCE.

Horizontal Magnetic Force in C. G. S. units from daily measures of the Continuous Curves.

The Figures in the columns are entered to the unit $10^{-5}$ C. G. S.

| 1895. | Mean of the highest daily readings. (a) | Mean of the lowest daily readings. (b) | Means of $a$ and $b$. (c) | Means of daily readings 4a.m. & 4p.m. (d) | Differences $d-c$ | Differences of a and b or Mean daily Range. | Highest reading of the Month. | Lowest reading of the Month. | Monthly Range. |
|---|---|---|---|---|---|---|---|---|---|
| | 17000 + | | | | 0+ | | 17000+ | | 0+ |
| January - - | 192 | 140 | 166 | 172 | 6 | 52 | 211 | 66 | 145 |
| February - | 202 | 133 | 168 | 170 | 2 | 69 | 236 | 19 | 217 |
| March - - | 210 | 126 | 168 | 175 | 7 | 84 | 236 | 81 | 155 |
| April - - | 208 | 121 | 165 | 174 | 9 | 87 | 256 | 66 | 190 |
| May - - | 215 | 125 | 170 | 171 | 1 | 90 | 284 | 101 | 183 |
| June - - | 210 | 114 | 162 | 169 | 7 | 96 | 264 | 76 | 188 |
| July - - | 200 | 112 | 156 | 164 | 8 | 88 | 259 | 66 | 193 |
| August - - | 184 | 117 | 151 | 160 | 9 | 67 | 241 | 56 | 185 |
| September - | 174 | 104 | 139 | 146 | 7 | 70 | 226 | 41 | 185 |
| October - - | 201 | 122 | 162 | 164 | 2 | 79 | 203 | 53 | 150 |
| November - | 214 | 144 | 179 | 182 | 3 | 70 | 260 | 55 | 205 |
| December - | 214 | 157 | 186 | 185 | —1 | 57 | 275 | 95 | 180 |
| Means - - | 202 | 126 | 164 | 169 | 5 | 76 | 246 | 65 | 181 |

Correction for diurnal range —4

Mean Horizontal Force for the year 0·17165 C.G.S. unit.

# DATES OF MAGNETIC DISTURBANCES, 1895.

The disturbances are divided generally into three classes, *small*, *moderate*, and *greater;* these are indicated by the initial letters of the classes, and the letter c denotes *calm*. Very great disturbances are marked vg. The days are reckoned astronomically, from noon to noon. The asterisk signifies that the record was partly or wholly lost, according as it stands with or without an initial letter.

| Month. | Jan. | Feb. | March | April | May | June | July | August | Sept. | Oct. | Nov. | Dec. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | m | s | m | m | s | m | m | s | s | m | s | s |
| 2 | s | s | s | s | m | m | s | c | c | c | s | s |
| 3 | s | c | m | s | s | m | c | s | c | s | s | s |
| 4 | s | m | s | s | c | m | s | s | s | m | s | s |
| 5 | s | s | m | m | s | m | m | s | m | m | s | * |
| 6 | s | m | s | m | s | m | s | s | s | s | s | s |
| 7 | s | m | s | s | m | s | c | s | c | s | s | m |
| 8 | c | m | m | s | m | s | s | s | c | s | m | m |
| 9 | s | g | m | s | m | m | s | m | s | s | m | m |
| 10 | s | m | s | m | m | m | s | m | s | s | m | m |
| 11 | s | s | s | g | s | m | s | m | s | s | m | s |
| 12 | s | s | s | m | s | s | m | s | s | g | m | s |
| 13 | s | s | g | m | c | s | m | s | s | g | s | s |
| 14 | s | m | g | s | m | s | m | s | m | m | s | s |
| 15 | s | g | m | m | c | s | s | s | m | m | m | c |
| 16 | m | m | m | m | s | s | s | c | s | m | s | c |
| 17 | m | s | m | s | s | s | s | s | s | m | s | c |
| 18 | m | s | s | s | s | s | s | s | m | s | s | m |
| 19 | m | s | s | m | s | s | s | c | s | s | c | s |
| 20 | m | s | s | s | s | s | s | s | m | s | s | c |
| 21 | m | s | s | s | s | c | s | c | s | s | s | m |
| 22 | m | c | s | c | m | s | s | c | s | s | s | m |
| 23 | m | s | s | m | s | s | s | s | s | s | m | m |
| 24 | s | m | s | s | s | s | c | s | s | s | m | m |
| 25 | s | c | s | m | s | c | s | s | s | c | s | s |
| 26 | s | c | s | m | s | s | m | s | s | m | s | s |
| 27 | c | s | s | s | s | s | m | c | c | m | s | c |
| 28 | c | s | s | s | g | s | m | s | c | m | s | c |
| 29 | c | | s | c | m | s | s | s | m | m | s | c |
| 30 | c | | m | c | m | m | s | c | m | m | s | s |
| 31 | m | | m | | s | | s | s | | m | | c |
| Totals c | 5 | 4 | | 3 | 3 | 2 | 3 | 7 | 6 | 2 | 1 | 8 |
| Totals s | 16 | 14 | 19 | 14 | 18 | 18 | 20 | 21 | 17 | 14 | 21 | 13 |
| Totals m | 10 | 8 | 10 | 12 | 9 | 10 | 8 | 3 | 7 | 13 | 8 | 9 |
| Totals g | 0 | 2 | 2 | 1 | 1 | | | | | 2 | | |
| Totals vg | 0 | | | | | | | | | | | |
| 1 day lost | | | | | | | | | | | | |

## PRESENTS RECEIVED

| | |
|---|---|
| Greenwich Observations, 1892 | Royal Observatory |
| Greenwich Spectroscopic and Photographic Results, 1892 | ,, |
| Assumed mean R.A. of Clock Stars with the corrections to the R.A. of the Nautical Almanac, 1896-0 | ,, |
| Meteorological Observations at Stations of the Second Order for the year 1890 | Meteorological Office |
| Report of the International Meteorological Committee (Upsala) | ,, |
| Beobachtungen des Tiflisser Physikalischen Observatoriums im Jahre, 1892-93, von J. Mielberg | ,, |
| Recent values of the Magnetic Elements by Charles Chree, Sc.D. | Kew Observatory |
| Reports of the Kew Committe, 1894 | ,, |
| Quarterly Returns of the Registrar General | Registrar General |
| Proceedings of the Royal Society | Royal Society |
| Report of the British Association for the advancement of Science, 1894 | British Association |
| Edinburgh Circulars | Royal Obs., Edinburgh |
| Report of Wolsingham Observatory, by Rev. J. E. Espin, F.R.A.S. | Wolsingham Observatory |
| The summary of a Meteorological Journal kept by C. Leeson Prince, F.R.A.S., etc, Crowborough Hill | Crowborough Hill Obs. |
| Summary of Meteorological Observations 1893, by the same | ,, |
| Report of the Liverpool Observatory, Bidston, 1894, by W. E. Plummer, M.A., F.R.A.S., etc. | Bidston Observatory |
| Report of Mr. Tebbutt's Observatory, New South Wales, 1894 | Tebbutt's Observatory |
| Monthly Meteorological Results, 1895, by Ernest W. Ellerbeck | Broad Green Observatory |

| | |
|---|---|
| Monthly Meteorological Report, 1895, by A. Rankin - - - - - | Ben Nevis Observatory |
| Report and Results of Observations at Southport Observatory, by J. Baxendell, F.R.Met.Soc. - - | Southport Observatory |
| Meteorological Observations, 1894, by Cuthbert E. Peek, M.A., F.S.A., etc. - - - - - - - | Rousden Observatory |
| Nineteenth and Twentieth Annual Report of the Salivian Professor of Astronomy to the Visitors of the Oxford University Observatory | Oxford Observatory |
| Record of Meteorological Observations at the Birmingham and Midland Institute Observatory by Alfred Cesswell - - - - - - | Birmingham Institute |
| On the Causes of the Phenomena of Terrestrial Magnetism and on some Electro-Mechanism for exhibiting the Secular Changes in its Horizontal and Vertical Components, by Henry Wild, F.R.S. - | Author |
| On the Origin of Elementary Substances and on some New Relations of their Atomic Weights, by the same | ,, |
| On the Multiple Proportions of the Atomic Weights of Elementary Substances in relation to the Unit of Hydrogen, by the same - - | ,, |
| On the Evidence afforded by Bode's Law of a permanent Contraction of the Radii Vectores of the Planetary Orbits by the same - - - | ,, |
| On the Photographic Arc Spectrum of Iron Meteorites, by J. Norman Lockyer, C.B., F.R.S. - - | ,, |
| On the Photographic Arc Spectrum of Electrolytic Iron, by the same - | ,, |
| On a lens for adapting a visually corrected Refracting Telescope to photographic observation with the Spectroscope, by J. E. Keeler - - - | ,, |
| Results of Meteorological Observations taken at Edinburgh, during 1894, by R. C. Mossman, F.R.S.E., &c. | ,, |
| Phases of Perigal's retrogressive Kinematic Parabola derived from the circle, by H. Perigal, F.R.A.S. - | ,, |
| A record of the Great Frost of January and February, 1895, by C. Leeson Prince, F.R. Met. Soc., &c. - | ,, |

| | |
|---|---|
| A literal translation of the Astronomy and Meteorology of Aratus, by the same - - - - - - - - | Author |
| Experiments on the Radiation of Heated Gases, John Evershed - - - | ,, |
| On a catalogue of stars in the Calendarium of Mohammad al achasi al Mouakket, by E. B. Knobel - | ,, |
| A New Story of the Stars, by A. W. Bickerton - - - - - - | ,, |
| On the Orbit of $\eta$ Cassiopeiæ ($\Sigma$ 60) by T. Lewis - - - - - - | ,, |
| On the Temperature of Carbons of the Electric Arc experiments, made at Daramona, Streete, Co. Westmeath, by W. E. Wilson, M.R.I.A., and P. L. Gray, B.Sc., A.R.C.S. | Authors |
| Solar Photographs - - - - - - | John S. Townsend |
| The Medical Officer's Report for the County Palatine of Lancaster - | Edward Sergeant, M.D. |
| Knowledge - - - - - - - - | Editor |
| The British Journal of Photography - | ,, |
| Forty-Second Annual Report of the Committee of the Free Public Library, Museums and Walker Art Gallery Liverpool - - - - - - | Committee |
| Indian Meteorological Memoirs Vols. V., VI., VII., by J. Eliot, M.A., etc. - | Met. Office, Calcutta |
| Instructions to Observers of the Indian Meteorological Department, by the same - - - - - - | ,, |
| Monthly Weather Review 1894-5, by the same - - - - - - | ,, |
| Annual summary, 1894, by the same - | ,, |
| Report on the administration of the Meteorological Department by the same - - - - - - | ,, |
| Indian Rainfall Data, 1894 - - - | ,, |
| Brief sketch of the Meteorology of the Bombay Presidency in the year 1894-5 - - - - - - | Bombay Met. Department |
| Magnetical and Meteorological Observations made at the Government Observatory - - - - - | ,, |
| Record of Observations made at the Melbourne Observatory by R. L. Ellery, C.M.G., F.R.S., &c. - | Melbourne Observatory |
| Observations made at the Magnetical and Meteorological Observatory at Batavia, 1893 - - - - | Batavia Observatory |

| | |
|---|---|
| Rainfall in the East Indian Archipelago 1893 | Batavia Observatory |
| Madras Meridian Circle Observations 1883—87 by C. Miche Smith B.Sc. F.R.A.S., &c. | Madras Observatory |
| Cape Meridian Observations 1885-87 | Royal Obs. Cape |
| Cape Catalogue 1895 | ,, |
| Report of H.M. Astronomer at the Cape of Good Hope for the year 1895 | ,, |
| Observations and Researches made at the Hong Kong Observatory 1894, by W. Doberck | Hong Kong Observatory |
| Annual Report of the Director of the Royal Alfred Observatory, Mauritius, for the year 1893 | Mauritius Observatory |
| Results of Meteorological Observations during 1894 | ,, |
| Pilot Charts of the North Atlantic Ocean, 1895 | U.S: Naval Observatory |
| Annals of the Astronomical Observatory of Harvard College | Harvard College Obs. |
| On some attempts to photograph the Solar Corona without an eclipse by E. Hale | Kenwood Astro-Phys. Obs. |
| An account of the Astro-Physical Journal by the same | ,, |
| Observatory Report for the year 1894-5 | Yale University |
| Monthly Weather Review | Met. Office, Toronto |
| Toronto General Meteorological Register 1894 | ,, |
| Transactions of the Astronomical and Physical Society of Toronto, 1894 | The Society |
| Transactions of the New York Academy of Sciences, vol. xiii., 1893—4 | New York Academy |
| Report of the Ohio Weather and Crop Service, 1894-5 | U.S. Weather Bureau |
| Twelfth Annual Report of the above, 1894 | ,, |
| Official Report on the condition of Crops and Live Stock, 1895 | ,, |
| Publications of the Lick Observatory, vol. iii, 1894 | Lick Observatory |
| Report on the total eclipse of the Sun observed at Mina Bronces Chile, on April 16th, 1894, by J. M. Schaeberle | ,, |
| Annual Tables, daily and hourly, for the year 1894 (Central Park) | New York Observatory |
| The Parallax of $\eta$ Cassiopeiæ, by Herman S. Davis | Columbia College Obs. |

| | |
|---|---|
| The Rutherford Photographic Measures of sixty-two Stars, about $\eta$ Cassiopeiæ, by the same - | Columbia College Obs. |
| Catalogue of 2000 Stars for the Epoch, 1890 - - - - - - | Cincinnati Observatory |
| Annuaire de la Société Météorologique de France - - - - | La Société |
| Annales de l'observatoire de Nice, tome IV, V, Par M. Perrotin - - | L'observatoire |
| Rapport Annuel sur l'état de l'observatoire de Paris pour l'année, 1894, Par M F. Tisserand - - | ,, |
| Bulletin des Observations Météorologiques. 1ère année 1894. Observatoire St. Louis, Jersey (Iles de la Manche) | ,, |
| Observations faites à l'observatoire Météorologique de l'université Impériale de Moscow, 1894 - - | ,, |
| Bulletin Mensuel de l'observatoire de Zi-ka-wei, 1893—4 - - - | ,, |
| Observations des Protubérances Solaires faites à l'observatoire d'Odessa, du mois d'août 1892 jusqu'au mois d'août 1893. Par A. Kononowitsh, N. Zuietenowitch et A. Orbinskij | ,, |
| Observations faites à l'observatoire de l'Université Impériale de Kazan 1894, par Dimitry Goldhammer - | ,, |
| Observations Météorologiques, 1894—5, Observatoire Impérial de Constantinople - - - - - - | ,, |
| Bulletin Météorologique et Séismique, 1895 | ,, |
| Expédition Danoise, 1882—3, Observations faites a Godthaeb sous la direction de Adam F. W. Paulsen | Inst. Mét. de Danemark |
| Status de la Société Belge d'astronomie Fondée, 1894 - - - - - | La Société |
| Etude sur le spectre de l'étoile variable "8 Cephei" par A. Bélopolsky - | L'Auteur |
| Sur la distribution à Vienne et à Thorshavn des éléments Météorologiques autour des Minima et des Maxima Barométriques par Ph. Akerblom - - - - - | ,, |
| Jahrbücher der K. K. Central—Anstalt für Meteorologie, und Erdmagnetismus, Von Dr. Julius Hann - | Das Institut |
| Ergebnisse der Meteorologischen Beobachtungen in Potsdam im Jahre 1893, durch Wilhelm Von Bezold | ,, |

| | |
|---|---|
| Ergebnisse der Beobachtungen an den Stationen II. und III. Ordnung im Jahre, 1891,-4,-5, Von Demselben | Das Institut |
| Ergebnisse der Gewitter–Beobachtungen im Jahre 1891, Von Demselben - | ,, |
| Bericht über die Thätigkeit des Königlich Preussischen Meteorologischen Instituts im Jahre 1894, Von Demselben - - - - - - - | ,, |
| Ergebnisse der Meteorologischen Beobachtungen im Jahre 1892, Von Demselben - - - - - - | ,, |
| Ergebnisse der Niederschlags—Beobachtungen im Jahre 1893, Von Demselben - - - - - - - | ,, |
| Meteorologisches Jahrbuck für 1894, Beobachtungssystem des Königreiches Sachsen. Herausgegeben Von Dr. Paul Schreiber - | ,, |
| Das Klima das Konigreiches Sachsen Heft III. Von Demselben - - | ,, |
| Annalen des Physikalischen Central—Observatoriums St. Petersbourg, Jahrgang 1893, Von H. Wild - | Das Observatorium |
| Das Konstantinow'sche Meteorologische und Magnetische Observatorium in Pawlowsk (bei St. Petersburgh) Von Demselben - - - - - | ,, |
| Annalen des Physikalischen Central—Observatoriums 1893, Von Demselben - - - - - - - - | ,, |
| Publicationen des Astrophysikalischen Observatoriums zu Potsdam Siebenter Band, II. Theil, und Zehnter Band, Von H. G. Vogel - | ,, |
| Astronomiska Iakttagelser och Undersökninger anstälda pa° Stockholms Observatorium utgifna af Hugo Gylden, Femte Bandet Häftet 1, 2, 3, und 4 - - - - - - | ,, |
| Meteorologische und Magnetische Beobachtungen an der Sternwarte des Hydrographischen Amtes der K.U.K. Kreigsmarine zu Pola, 1895 - - - - - - - - | Die Starnwarte |
| Astronomische Mittheilungen von der Königlichen Sternwarte zu Göttingen, Vierter Theil, von Dr. Wilhelm Schur - - - - - | ,, |

| | |
|---|---|
| Ergebnisse der Meteorologischen Beobachtungen im Reichsland Elsass—Lothringen im Jahre 1893, Von Dr. Hugo Hergesell - | Der Verfasser |
| Resultate der im Sommer 1894 in dem südlichsten Theile Norwegens ausgeführten Pendelbeobachtungen Von O. E. Schiötz - - | ,, |
| Magnetische Beobachtungen an der deutschen Bucht der Nordsee 1894 und Elemente des Erdmagnetisms an festen Stationen Europa's 1. d. J, 1885, 90 und 93, Von A. Schück - - - - - | ,, |
| Einige Magnetische Beobactungen, Von Demselben - - - - - - | ,, |
| Die Aenderung der Elemente des Erdmagnetisms in Europa, Von Demselben - - - - - | ,, |
| Astronomische Mitteilungen, Von A. Wolfer - - - - - - | ,, |
| Die Triangulation von Java, Von. Dr. J. A. C. Oudemans - - - | ,, |
| Uber das Vorkommen der Linien des Cleveitgas—spectrums in den Sternspectren und über die Classification der sterne vom ersten Spectraltypus, Von H. C. Vogel | ,, |
| Astronomische und Magnetische Beobachtungen 1882—84 Bearbeitet Von V. Fuss, F. Müller und N. Jürgens, Herausgegeben unter Redaction Von Dr. A. V. Tillo | ,, |
| Astronomische Beobachtungen und Vergleichung der Astronomischen und Geodätischen Resultate - | Norwegischen Commission |
| Analele Institutului Meteorologic al România, publicate de Stefan C. Hepites - - - - - - | Das Institut |
| Publicazioni della Specola Vaticana, Vol. IV. - - - - - - | Specola Vaticana |
| Memorias de la Sociedad Científica. "Antonio Alzate" 1894-5 - - | La Sociedad |
| XI. Congreso de Americanistas - - | Primer Secretario |
| Baguios ó Tifones de 1894 por el P. José Algué, S.J. - - - - - - | Observatorio de Manila |
| Observaciones verificadas 1894-5 - | ,, |
| La Seismologia en Filipinas por el P. Miguel Saderra Masó - - - | ,, |
| Resúmen Anual de las Observaciones practicadas durante el año de 1892 Observatorio de San Salvador | Observatorio |

| | |
|---|---|
| Resúmen de las Observaciones Meteorológicas 1894, Observatorio Central México - - - - - - | Observatorio |
| Boletin Mensual del Observatorio Meteorológico Central de Mêxico 1895 | ,, |
| Boletin del Observatorio Astronómico Nacional de Tacubaya - - - | ,, |
| Anuario Observatorio para el año de 1895-6 - - - - - - | ,, |
| Observaciones Mèteorológicas del Col. Cat. Puebla 1894-5 - - - - | ,, |
| Observaciones Magnéticas y Meteorológicas del R. Col., de Belen en la Habana 1890 - - - - - | ,, |
| Anales del Instituto y Observatorio de Marina de San Fernando por el director Don Juan Viniegra 1893 - | ,, |
| Almanaque Náutico para 1897 - - | ,, |
| Observaciones Meteorológicas del año de 1893, San Salvador por el Dr. Alberto Sánchez - - - - - | ,, |
| Boletin del Observatorio Meteorológico Central del Estado de Veracruz México. 1894-5 - - - - - | ,, |
| Obs. Met. 1891-94, Colegio de San Juan Nepomuceno Saltillo, Coahuila México - - - - - - - | ,, |
| Observaciones Meteorológicas hechas en el Colegio Máximo de la Compañia de Jesus en Oña - - - - | ,, |
| Boletin Mensual del Observatorio Meteorológico Central del Estado de Véracruz Llave 1895 - - - | ,, |
| Observaciones de Precision con el Sextant por el Conde de Cañete del Pinar - - - - - - - - | Autor |
| Bollettino Mensuale dell oss Central del R. Coll. Carlo Alberto in Moncalieri 1894-5 - - - - - | Osservatorio |

APPENDIX

# RESULTS

OF

# METEOROLOGICAL OBSERVATIONS

TAKEN AT

## ST. IGNATIUS' COLLEGE, MALTA

BY THE

REV. J. F. DOBSON, S.J.

1895

# ST. IGNATIUS' COLLEGE,

## MALTA.

Lat 35° 55′ N. Long. 14° 29′ E. Barometer Readings. reduced to 32° F. at sea level.

---

# METEOROLOGICAL REPORT.

## JANUARY, 1895.

| Result of Observations taken during the Month. | | Mean for the last 12 years |
|---|---|---|
| Mean Reading of the Barometer....inches | 29·906 | 30·041 |
| Highest ,, on the 20th ,, | 30·342 | 30·413 |
| Lowest ,, on the 1st ,, | 29·396 | 29·572 |
| Range of Barometer Readings .....,, | 0·946 | 0·841 |
| Highest Reading of a Max. Therm. on the 17th | 67·5 | 64·8 |
| Lowest Reading of a Min. Therm. on the 30th | 39·3 | 41·6 |
| Range of Thermometer Readings ..... | 28·2 | 23·2 |
| Greatest Range in 24 hours on the 16th ..... | 18·7 | 18·4 |
| Mean of all the Highest Readings ..... | 60·2 | 58·9 |
| Mean of all the Lowest Readings ..... | 48·3 | 48·3 |
| Mean Daily Range .. ..... | 11·9 | 10·6 |
| Mean Temperature (deduced from Max. & Min.) | 53·6 | 52·9 |
| Mean Temperature (deduced from Dry Bulb) | 52·9 | 52·7 |
| Adopted Mean Temperature..... ... | 53·3 | 52·8 |
| Mean Temperature of Evaporation..... | 48·3 | 48·5 |
| Mean Temperature of Dew Point ..... | 44·9 | 45·5 |
| Mean elastic force of Vapour .....inches | 0·298 | 0·305 |
| Mean weight of Vapour in a cub. ft. of air grains | 3·3 | 3·5 |
| Mean additional weight required for saturation ,, | 0·9 | 0·9 |
| Mean degree of Humidity ..... | 79 | 80 |
| Mean weight of a cubic foot of air ....grains | 539·7 | 542·4 |
| Fall of Rain ..... .....inches | 1·907 | 3·881 |
| Number of days on which Rain fell ..... | 10 | 14 |
| Mean amount of Cloud (an overcast sky=10).. | 5·7 | 5·2 |
| Total number of miles of Wind indicated .... | 9767 | 8269 |
| Mean Velocity of Wind per hour .....miles | 13·1 | 11·1 |

## FEBRUARY, 1895.

| Results of Observations taken during the Month. | | Mean for the last 12 years. |
|---|---|---|
| Mean Reading of the Barometer ..... inches | 29·870 | 30·032 |
| Highest ,, on the 1st ,, | 30·119 | 30·333 |
| Lowest ,, on the 17th ,, | 29·435 | 29·646 |
| Range of Barometer Readings..... ,, | 0·684 | 0·687 |
| Highest Reading of a Max. Therm. on the 27th | 70·5 | 67·0 |
| Lowest Reading of a Min. Therm. on the 19th | 34·2 | 41·8 |
| Range of Thermometer Readings ..... | 36·3 | 25·2 |
| Greatest Range in 24 hours on the 20th ..... | 20·1 | 19·3 |
| Mean of all the Highest Readings ..... | 62·0 | 60·1 |
| Mean of all the Lowest Readings..... | 50·3 | 49·0 |
| Mean Daily Range ..... | 11·7 | 11·1 |
| Mean Temperature (deduced from Max & Min) | 55·2 | 53·5 |
| Mean Temperature (deduced from Dry Bulb) | 55·3 | 53·8 |
| Adopted Mean Temperature..... | 55·3 | 53·7 |
| Mean Temperature of Evaporation..... | 50·7 | 49·5 |
| Mean Temperature of Dew Point..... | 47·6 | 46·6 |
| Mean elastic force of Vapour ..... inches | 0·330 | 0·319 |
| Mean weight of Vapour in a cub.ft. of air grains | 3·7 | 3·6 |
| Mean additional weight required for saturation,, | 0·9 | 0·8 |
| Mean degree of Humidity ..... | 80 | 82 |
| Mean weight of a cubic foot of air .... grains | 536·7 | 540·9 |
| Fall of Rain ..... inches | 1·076 | 2·253 |
| Number of days on which Rain fell..... | 9 | 9 |
| Mean amount of Cloud (an overcast sky=10) | 6·7 | 4·8 |
| Total number of miles of Wind indicated .... | 8576 | 7865 |
| Mean Velocity of Wind per hour ..... miles | 12·8 | 11·6 |

## MARCH, 1895.

| Results of Observations taken during the Month. | | Mean for the last 12 years |
|---|---|---|
| Mean Reading of the Barometer.....inches | 29·992 | 29·995 |
| Highest ,, on the 24th ,, | 30·233 | 30·361 |
| Lowest ,, on the 12th ,, | 29·513 | 29·528 |
| Range of Barometer Readings ..... ,, | 0·720 | 0·833 |
| Highest Reading of a Max. Therm.on the 30th | 81·6 | 73·4 |
| Lowest Reading of a Min. Therm. on the 20th | 41·8 | 42·9 |
| Range of Thermometer Readings ..... | 39·8 | 30·5 |
| Greatest Range in 24 hours on the 30th ..... | 25·4 | 22·6 |
| Mean of all the Highest Readings ..... | 63·9 | 63·1 |
| Mean of all the Lowest Readings..... | 49·4 | 50·8 |
| Mean Daily Range ..... | 14 5 | 12·3 |
| Mean Temperature (deduced from Max. & Min.) | 56·0 | 56·1 |
| Mean Temperature (deduced from Dry Bulb) | 53·9 | 55·3 |
| Adopted Mean Temperature..... | 55·0 | 55·7 |
| Mean Temperature of Evaporation..... | 50·7 | 51·6 |
| Mean Temperature of Dew Point ..... | 47·3 | 48·4 |
| Mean elastic force of Vapour.....inches | 0·327 | 0·341 |
| Mean weight of Vapour in a cub. ft. of air grains | 3·7 | 3·8 |
| Mean additional weight required for saturation ,, | 1·1 | 1·1 |
| Mean degree of Humidity ..... | 76 | 79 |
| Mean weight of a cubic foot of air ....grains | 537·1 | 537·4 |
| Fall of rain .....inches | 0·803 | 1·060 |
| Number of Days on which rain fell ..... | 9 | 7 |
| Mean amount of Cloud (an overcast sky=10) | 4·5 | 4·5 |
| Total number of miles of Wind indicated..... | 8800 | 8020 |
| Mean Velocity of Wind per hour .....miles | 11·8 | 10·7 |

## APRIL, 1895.

| Results of Observations taken during the Month. | | Mean for the last 12 years. |
|---|---|---|
| Mean Reading of the Barometer.....inches | 29·971 | 29·939 |
| Highest ,, on the 11th ,, | 30·138 | 30·264 |
| Lowest ,, on the 1st ,, | 29·657 | 29·523 |
| Range of Barometer Readings..... ,, | 0·481 | 0·741 |
| Highest Reading of a Max. Therm. on the 17th | 80·4 | 76·8 |
| Lowest Reading of a Min. Therm. on the 2nd | 51·3 | 47·8 |
| Range of Thermometer Readings..... | 29·1 | 29·0 |
| Greatest Range in 24 hours on the 27th ..... | 22·1 | 21·9 |
| Mean of all the Highest Readings ..... | 70·3 | 67·3 |
| Mean of all the Lowest Readings..... | 56·5 | 54·1 |
| Mean Daily Range ..... | 13·8 | 13·2 |
| Mean Temperature (deduced from Max. & Min.) | 62·4 | 59·8 |
| Mean Temperature (deduced from Dry Bulb) | 61·7 | 59·5 |
| Adopted Mean Temperature..... | 62·0 | 59·7 |
| Mean Temperature of Evaporation ..... | 57·6 | 55·6 |
| Mean Temperature of Dew Point ..... | 54·0 | 52·3 |
| Mean elastic force of Vapour.....inches | 0·418 | 0 392 |
| Mean weight of Vapour in a cub. ft. of air grains | 4·6 | 4·4 |
| Mean additional weight required for saturation ,, | 1·5 | 1·3 |
| Mean degree of Humidity ..... | 77 | 78 |
| Mean weight of a cubic foot of air ....grains | 531·1 | 531·4 |
| Fall of Rain .....inches | 0·115 | 0·787 |
| Number of Days on which rain fell..... | 2 | 6 |
| Mean amount of Cloud (an overcast sky=10).. | 4·9 | 4·4 |
| Total number of miles of Wind indicated .... | 7609 | 8235 |
| Mean Velocity of Wind per hour .....miles | 10·6 | 11·5 |

## MAY, 1895.

| Results of Observations taken during the Month | | Mean for the last 12 years. |
|---|---|---|
| Mean Reading of the Barometer.....inches | 30·024 | 29·988 |
| Highest ,, on the 2nd ,, | 30 335 | 30·172 |
| Lowest ,, on the 17th ,, | 29·654 | 29·623 |
| Range of Barometer Readings..... ,, | 0·681 | 0·549 |
| Highest Reading of a Max. Therm. on the 24th | 81·6 | 82·1 |
| Lowest Reading of a Min. Therm. on the 9th | 53·1 | 53·6 |
| Range of Thermometer Readings ..... | 28·5 | 28·5 |
| Greatest Range in 24 hours on the 3rd..... | 22 1 | 23·7 |
| Mean of all the Highest Readings..... | 72·7 | 72·7 |
| Mean of all the Lowest Readings ..... | 59.3 | 58·5 |
| Mean Daily Range..... .. ..... | 13·4 | 14·2 |
| Mean Temperature(deduced from Max.& Min) | 65·0 | 64·4 |
| Mean Temperature (deduced from Dry Bulb) | 64 8 | 63·9 |
| Adopted Mean Temperature ..... | 64·9 | 64·2 |
| Mean Temperature of Evaporation ..... | 60·9 | 60·1 |
| Mean Temperature of Dew Point ..... | 57·2 | 56·6 |
| Mean elastic force of Vapour .....inches | 0·469 | 0·459 |
| Mean weight of Vapour in a cubic ft. of air grains | 5·2 | 5·0 |
| Mean additional weight required for saturation ,, | 1·7 | 1·7 |
| Mean degree of Humidity..... | 75 | 76 |
| Mean weight of a cubic foot of air.... grains | 526·8 | 526·8 |
| Fall of Rain.....inches | 0·506 | 0 648 |
| Number of days on which Rain fell..... | 3 | 3 |
| Mean amount of Cloud (an overcast sky=10) | 5·8 | 3·7 |
| Total number of miles of Wind indicated .. | 6636 | 7362 |
| Mean Velocity of Wind per hour..... miles | 8·9 | 9·9 |

## JUNE, 1895.

| Results of Observations taken during the Month. | | Mean for the last 12 years. |
|---|---|---|
| Mean Reading of the Barometer ..... inches | 30·038 | 30·013 |
| Highest ,, on the 23rd ,, | 30·220 | 30·177 |
| Lowest ,, on the 11th ,, | 29·795 | 29·819 |
| Range of Barometer Readings..... ,, | 0·425 | 0·358 |
| Highest Reading of a Max. Therm. on the 29th | 88·1 | 90·5 |
| Lowest Reading of a Min. Therm. on the 1st | 57·1 | 58·9 |
| Range of Thermometer Readings ..... | 31·0 | 31·6 |
| Greatest Range in 24 hours on the 29th .... | 23·1 | 25·4 |
| Mean of all the Highest Readings ..... | 79·2 | 80·5 |
| Mean of all the Lowest Readings ..... | 65·1 | 64·6 |
| Mean Daily Range ..... | 14·1 | 15 9 |
| Mean Temperature (deduced from Max. & Min) | 71·5 | 71·8 |
| Mean Temperature (deduced from Dry Bulb) | 70·6 | 71·1 |
| Adopted Mean Temperature ... ..... | 71·0 | 71·5 |
| Mean Temperature of Evaporation ..... | 66·3 | 65·9 |
| Mean Temperature of Dew Point ..... | 62·7 | 61·6 |
| Mean elastic force of Vapour ..... inches | 0·570 | 0·549 |
| Mean weight of Vapour in a cub. ft. of air grains | 6·2 | 5·9 |
| Mean additional weight required for saturation,, | 2·1 | 2·4 |
| Mean degree of Humidity ..... .... | 75 | 71 |
| Mean weight of a cubic foot of air .....grains | 520·7 | 519·7 |
| Fall of Rain .....inches | 0·000 | 0·080 |
| Number of days on which Rain fell ..... | 0 | 1 |
| Mean amount of Cloud (an overcast sky=10) | 3·2 | 2·0 |
| Total number of miles of Wind indicated.... | 7453 | 6181 |
| Mean Velocity of Wind per hour .....miles | 10·4 | 8 6 |

## JULY, 1895.

| Results of Observations taken during the Month. | | Mean for the last 12 years |
|---|---|---|
| Mean Reading of the Barometer .....inches | 30·012 | 30·006 |
| Highest ,, on the 3rd... ,, | 30·105 | 30·149 |
| Lowest ,, on the 19th... ,, | 29·818 | 29·835 |
| Range of Barometer Readings ..... ,, | 0·287 | 0·314 |
| Highest Reading of a Max. Therm. on the 5th | 103·6 | 97·0 |
| Lowest Reading of a Min. Therm. on the 11th... | 64·6 | 64·7 |
| Range of Thermometer Readings ..... | 39·0 | 32·3 |
| Greatest Range in 24 hours on the 5th..... | 31·9 | 26·5 |
| Mean of all the Highest Readings..... | 87·7 | 86·9 |
| Mean of all the Lowest Readings..... | 69·7 | 69·8 |
| Mean Daily Range ..... | 18·0 | 17·1 |
| Mean Temperature (deduced from Max.& Min) | 78·2 | 77·8 |
| Mean Temperature (deduced from Dry Bulb) | 78·9 | 76·8 |
| Adopted Mean Temperature ..... | 78·6 | 77·3 |
| Mean Temperature of Evaporation ..... | 70·8 | 70·4 |
| Mean Temperature of Dew Point..... | 68·0 | 65·6 |
| Mean elastic force of Vapour .....inches | 0·684 | 0·631 |
| Mean weight of Vapour in a cub.ft.of air grains | 6·6 | 6·8 |
| Mean additional weight required for saturation,, | 4·1 | 3·3 |
| Mean degree of Humidity ..... | 61 | 67 |
| Mean weight of a cubic foot of air .....grains | 511·4 | 513·6 |
| Fall of Rain .....inches | 0·0 | 0·037 |
| Number of days on which Rain fell..... | 0 | ..... |
| Mean amount of Cloud (an overcast sky=10) | 1·2 | 0·8 |
| Total number of miles of Wind indicated..... | 5021 | 5556 |
| Mean Velocity of Wind per hour .....miles | 6·8 | 7·5 |

## AUGUST, 1895.

| Results of Observations taken during the Month | | Mean for the last 12 years. |
|---|---|---|
| Mean Reading of the Barometer .....inches | 30·021 | 30·013 |
| Highest ,, on the 28th .. ,, | 30·221 | 30·159 |
| Lowest ,, on the 4th.... ,, | 29 862 | 29·859 |
| Range of Barometer Readings ..... | 0·359 | 0·300 |
| Highest Reading of a Max. Therm. on the 1st | 91·9 | 96·7 |
| Lowest Reading of a Min. Therm. on the 26th | 61·4 | 66·1 |
| Range of Thermometer Readings ..... | 30·5 | 30·6 |
| Greatest Range in 24 hours on the 26th ... ..... | 28·8 | 25·8 |
| Mean of all the Highest Readings..... | 87·1 | 87·2 |
| Mean of all the Lowest Readings ..... | 68·8 | 70 9 |
| Mean Daily Range ..... | 18·3 | 16·3 |
| Mean Temperature (deduced from Max.& Min.) | 77·2 | 78·3 |
| Mean Temperature (deduced from Dry Bulb) | 77·9 | 78·2 |
| Adopted Mean Temperature ..... ..... | 77·6 | 78·2 |
| Mean Temperature of Evaporation ..... | 71·9 | 71·4 |
| Mean Temperature of Dew Point..... | 67·6 | 66·7 |
| Mean elastic force of Vapour .....inches | 0·675 | 0·654 |
| Mean weight of Vapour in a cub. ft. of air grains | 7·2 | 6·9 |
| Mean additional weight required for saturation ,, | 3·0 | 3·4 |
| Mean degree of Humidity ..... | 70 | 67 |
| Mean weight of a cubic foot of air .....grains | 512·4 | 512·3 |
| Fall of Rain .. ..... ..inches | 0·370 | 0·089 |
| Number of days on which Rain fell..... | 1 | 1 |
| Mean amount of Cloud (an overcast sky=10) | 1·7 | 1·0 |
| Total number of miles of Wind indicated .... | 4708 | 5397 |
| Mean Velocity of Wind per hour... .....miles | 6·3 | 7·2 |

## SEPTEMBER, 1895.

| Results of observations taken during the Month. | | Mean for the last 12 years. |
|---|---|---|
| Mean Reading of the Barometer .... inches | 30·135 | 30·061 |
| Highest ,, on the 24th ,, | 30·377 | 30·246 |
| Lowest ,, on the 14th ,, | 29·948 | 29·849 |
| Range of Barometer Readings ..... ,, | 0·429 | 0·397 |
| Highest Reading of a Max. Therm. on the 13th | 90·1 | 94·0 |
| Lowest Reading of a Min. Therm. on the 1st | 57·7 | 63·4 |
| Range of Thermometer Readings ..... | 32·4 | 30·6 |
| Greatest Range in 24 hours on the 1st ..... | 30·5 | 23·4 |
| Mean of all the Highest Readings ..... | 84·0 | 83·4 |
| Mean of all the Lowest Readings ..... | 67·3 | 69·1 |
| Mean Daily Range ..... | 16·7 | 14·3 |
| Mean Temperature (deduced from Max & Min) | 74·7 | 75·4 |
| Mean Temperature (deduced from Dry Bulb) | 74·5 | 74·9 |
| Adopted Mean Temperature ..... | 74·6 | 75·3 |
| Mean Temperature of Evaporation..... | 68·6 | 69·4 |
| Mean Temperature of Dew Point..... | 64·2 | 65·3 |
| Mean elastic force of Vapour.....inches | 0·601 | 0·626 |
| Mean weight of Vapour in a cub. ft. of air grains | 6·5 | 6·7 |
| Mean additional weight required for saturation ,, | 2·8 | 2·7 |
| Mean degree of Humidity ..... | 70 | 72 |
| Mean weight of a cubic foot of air ..grains | 518·3 | 516·7 |
| Fall of Rain .....inches | 0·125 | 1·165 |
| Number of days on which Rain fell ..... | 1 | 4 |
| Mean amount of Cloud (an overcast sky=10) | 2·3 | 2·5 |
| Total number of miles of wind indicated ..... | 4135 | 5668 |
| Mean Velocity of Wind per hour.....miles | 5·8 | 7·9 |

## OCTOBER, 1895.

| Results of Observations taken during the Month. | | Mean for the last 12 years. |
|---|---|---|
| Mean Reading of the Barometer .....inches | 29·997 | 30·051 |
| Highest ,, on the 1st ,, | 30·247 | 30·263 |
| Lowest ,, on the 20th ,, | 29 654 | 29·751 |
| Range of Barometer Readings..... ,, | 0·593 | 0·512 |
| Highest Reading of a Max. Therm. on the 27th | 90·8 | 87·9 |
| Lowest Reading of a Min. Therm. on the 20th | 53·3 | 56·1 |
| Range of Thermometer Readings..... | 37·5 | 31·8 |
| Greatest Range in 24 hours on the 1st..... | 22·1 | 19·8 |
| Mean of all the Highest Readings..... | 80·0 | 76·7 |
| Mean of all the Lowest Readings ..... | 65·9 | 64·7 |
| Mean Daily Range ..... | 14·1 | 12·0 |
| Mean Temperature (deduced from Max.& Min.) | 72·0 | 69·8 |
| Mean Temperature (deduced from Dry Bulb) | 69 9 | 68·9 |
| Adopted Mean Temperature ..... | 71·0 | 69·5 |
| Mean Temperature of Evaporation ..... | 65·2 | 64·6 |
| Mean Temperature of Dew Point..... | 61·4 | 61·1 |
| Mean elastic force of Vapour .....inches | 0·545 | 0·543 |
| Mean weight of Vapour in a cub. ft.of air grains | 6·1 | 5·9 |
| Mean additional weight required for saturation ,, | 1·8 | 1·8 |
| Mean degree of Humidity ..... | 75 | 76 |
| Mean weight of a cubic foot of air.....grains | 522·5 | 523·1 |
| Fall of Rain .....inches | 1·173 | 2·921 |
| Number of days on which Rain fell..... | 6 | 7 |
| Mean amount of Cloud (an overcast sky=10) | 4·5 | 4·1 |
| Total number of miles of Wind indicated .... | 7389 | 6630 |
| Mean Velocity of Wind per hour .....miles | 9·9 | 9·0 |

## NOVEMBER, 1895.

| Results of Observations taken during the month. | | Mean for the last 12 years. |
|---|---|---|
| Mean Reading of the Barometer....inches | 30·163 | 30·069 |
| Highest ,, on the 7th ,, | 30·447 | 30·314 |
| Lowest ,, on the 24th ,, | 29·644 | 29·719 |
| Range of Barometer Readings ..... ,, | 0·803 | 0·595 |
| Highest Reading of a Max. Therm. on the 11th | 78·1 | 76·6 |
| Lowest Reading of a Min. Therm. on the 21st | 55·5 | 49·6 |
| Range of Thermometer Readings ..... | 22·6 | 27·0 |
| Greatest Range in 24 hours on the 21st ..... | 19·0 | 18·4 |
| Mean of all the Highest Readings ..... | 73·3 | 68·5 |
| Mean of all the Lowest Readings ..... | 61·4 | 57·4 |
| Mean Daily Range ..... | 11·9 | 11·1 |
| Mean Temperature (deduced from Max. & Min.) | 66·3 | 62·1 |
| Mean Temperature (deduced from Dry Bulb) | 65·2 | 61·5 |
| Adopted Mean Temperature..... | 65·8 | 61·8 |
| Mean Temperature of Evaporation ..... | 61·4 | 57·2 |
| Mean Temperature of Dew Point..... | 58·7 | 53·8 |
| Mean elastic force of Vapour .....inches | 0·494 | 0·414 |
| Mean weight of Vapour in a cub. ft. of air grains | 5·6 | 4·7 |
| Mean additional weight required for saturation ,, | 1·2 | 1·3 |
| Mean degree of Humidity ..... | 82 | 79 |
| Mean weight of a cubic foot of air....grains | 529·5 | 532·1 |
| Fall of Rain .....inches | 1·791 | 3·418 |
| Number of Days on which rain fell ..... | 11 | 10 |
| Mean amount of Cloud (an overcast sky=10) | 6·6 | 5·1 |
| Total number of miles of Wind indicated.... | 5622 | 6723 |
| Mean Velocity of Wind per hour.....miles | 7·8 | 9·3 |

## DECEMBER, 1895.

| Results of Observations taken during the Month. | | Mean for the last 12 years |
|---|---|---|
| Mean Reading of the Barometer ....inches | 29·970 | 30·047 |
| Highest ,, on the 10th ,, | 30·327 | 30·389 |
| Lowest ,, on the 14th ,, | 29·706 | 29·569 |
| Range of Barometer Readings ..... | 0·621 | 0·820 |
| Highest Reading of a Max. Therm. on the 19th | 69·9 | 68·6 |
| Lowest Reading of a Min. Therm. on the 31st | 44·2 | 43·7 |
| Range of Thermometer Readings ..... | 25·7 | 24·9 |
| Greatest Range in 24 hours on the 11th ..... | 18 6 | 17·3 |
| Mean of all the Highest Readings ..... | 61·2 | 61·9 |
| Mean of all the Lowest Readings ..... | 53·4 | 52·2 |
| Mean Daily Range ..... | 7 8 | 9·7 |
| Mean Temperature (deduced from Max & Min.) | 56·6 | 56·4 |
| Mean Temperature (deduced from Dry Bulb) | 57·3 | 56·0 |
| Adopted Mean Temperature ..... | 56·9 | 56·2 |
| Mean Temperature of Evaporation..... | 52·5 | 51·8 |
| Mean Temperature of Dew Point ..... | 48·7 | 48·6 |
| Mean elastic force of Vapour ..... inches | 0·344 | 0·342 |
| Mean weight of Vapour in a cub. ft. of air grains | 3·9 | 3·9 |
| Mean additional weight required for saturation,, | 1·2 | 1·1 |
| Mean degree of Humidity ..... | 76 | 79 |
| Mean weight of a cubic foot of air ....grains | 535·4 | 538·6 |
| Fall of Rain ..... inches | 3·518 | 4.266 |
| Number of days on which Rain fell ..... | 15 | 15 |
| Mean amount of Cloud (an overcast sky=10) .. | 6·9 | 5·7 |
| Total number of miles of Wind indicated.... | 9039 | 8205 |
| Mean Velocity of Wind per hour ..... miles | 12·2 | 11·1 |

# Summary of Observations FOR 1895.

| Results of Observations taken during the Year. | | Mean for the last 12 years. |
|---|---|---|
| Mean Reading of the Barometer ....inches | 30·008 | 30·024 |
| Highest ,, on November 7th | 30·447 | 30·489 |
| Lowest ,, on January 1st | 29·396 | 29·370 |
| Range of Barometer Readings ..... | 1·051 | 1·119 |
| Highest Reading of a Max. Therm. on July 5th | 103·6 | 99·0 |
| Lowest Reading of a Min. Therm. on Feb. 19th | 34·2 | 40·8 |
| Range of Thermometer Readings ..... | 69·4 | 58·2 |
| Greatest Range in 24 hours on July 5th ..... | 31·9 | 28·5 |
| Mean of all the Highest Readings ..... | 73·5 | 72·5 |
| Mean of all the Lowest Readings..... | 59·6 | 59·3 |
| Mean Daily Range ..... | 13·9 | 13·2 |
| Mean Temperature (deduced from Max. & Min.) | 65·7 | 65·0 |
| Mean Temperature (deduced from dry bulb).. | 65 2 | 64·4 |
| Adopted Mean Temperature ..... | 65·5 | 64·7 |
| Mean Temperature of Evaporation ..... | 60·4 | 59·8 |
| Mean Temperature of Dew Point..... | 57·2 | 56·1 |
| Mean elastic force of Vapour .....inches | 0·480 | 0·453 |
| Mean weight of Vapour in a cub. ft. of air grains | 5·2 | 5·1 |
| Mean additional weight required for saturation ,, | 1·9 | 1·8 |
| Mean degree of Humidity ..... | 75 | 76 |
| Mean weight of a cubic foot of air ....grains | 526·8 | 527·9 |
| Fall of rain ..... inches | 11·384 | 20·207 |
| Number of days on which rain fell ..... | 67 | 77 |
| Mean amount of Cloud (an overcast sky=10) | 4·5 | 3·6 |
| Total number of miles of wind indicated .... | 84755 | 83924 |
| Mean Velocity of Wind per hour.....miles | 9·7 | 9·6 |

## Since May, 1883.

The Maximum monthly mean height of the Barometer was in November, 1889, and was ..... .....inches 30·249

The Minimum ,, ,, in January, 1886, and was 29·844

| | | |
|---|---|---|
| The Maximum yearly mean height of the Barometer was in 1884, and was | inches | 30·057 |
| The Minimum ,, ,, in 1890, and was | | 29·996 |
| The greatest monthly range of the Barometer was in January, 1886, and was | | 1·201 |
| The least ,, ,, in August, 1883, and was | | 0·188 |
| The highest reading of the Barometer was on January 26th, 1887, and was | | 30·627 |
| The lowest ,, ,, on January 17th, 1886, and was | | 29·155 |
| Extreme range | | 1·472 |
| The highest temperature was on July 20th, 1889, and was | | 104·1 |
| The lowest ,, ,, February 19th, 1895 | | 34·2 |
| The highest mean temperature of a month was in August, 1885, and was | | 83·2 |
| The lowest ,, ,, ,, February, 1891, | | 49·5 |
| The greatest monthly mean weight of vapour in a cubic foot of air | grains, August, 1885 | 7·9 |
| The least ,, ,, January and February, 1891, and was | gr | 3·0 |
| The highest observed Dew point was on August 30th, 1885, and was | | 78·7 |
| The lowest ,, ,, February 19th, 1895, and was | | 27·9 |
| The greatest fall of rain in a month, was in December, 1889, and was | inches | 8 952 |
| The greatest number of days on which rain fell in one month | days, January, 1889 | 24 |
| The greatest fall of rain in a year was in 1889 and was | inches | 26·044 |
| The smallest ,, ,, ,, 1895 ,, ,, | | 11·384 |
| The greatest number of rainy days in a year was in 1894 and was | | 90 |
| The least ,, ,, ,, 1888 ,, | | 59 |
| The highest temperature registered in sunshine was on the 5th July, 1895, and was | | 159·0 |
| The lowest temperature registered on ground was on the 19th February, 1895, and was | | 31·7 |
| The highest observed sea temperature was on the 5th August, 1887, and was | | 85·0 |
| The lowest ,, ,, 30th January, 1895, and was | | 55·5 |
| The smallest mean amount of cloud observed in one month was in August, 1890, and was | | 0·0 |
| The greatest ,, ,, in January, 1894, and was | | 7·2 |

## NOTES FOR THE SEPARATE MONTHS.

### JANUARY.

THE Dew point ranged between 57·3° on the 17th, and 31·6° on the 29th.

In Sunshine, the highest reading was 119·1° on the 20th.

On Ground, the lowest reading was 33·0° on the 30th.

The Sea has fallen to 55·5°.

Thunderstorms passed on the 2nd and 3rd.

Lightning was seen on the 5th, 10th, 28th, and 30th.

Hail fell on the 3rd, 6th, 10th, 29th, 30th, and 31st.

Total Rainfall since last June 15·653 inches ; the average of 10 years, 15·089 inches.

The Sea Temperature is the lowest yet recorded.

### FEBRUARY.

The Dew-point ranged between 27·9° on the 19th, and 56·0° on the 26th.

In Sunshine, the highest reading was 121·6° on the 6th and 13th.

On Ground, the lowest reading was 31·7° on the 19th.

The Sea has averaged 58·5°.

Thunderstorms passed on the 7th.

Total Rainfall since last June 16·729 inches ; the average of 10 years, 17·176 inches.

The temperature on the ground on the 19th is the lowest recorded at this station.

MARCH.

The Dew-point ranged between 37·1° on the 1st, and 55·6° on the 31st.

In Sunshine, the highest reading was 132·5° on the 30th.

On Ground, the lowest reading was 36·3° on the 19th.

The Sea has risen to 61·0°.

Thunderstorms passed on the 27th.

Lightning was seen on the 6th and 20th.

Hail fell on the 6th and 7th.

Total Rainfall since last June 17·532 inches ; the average of 10 years, 18·072 inches.

APRIL.

The Dew-point ranged between 46·7° on the 10th, and 61·7° on the 26th.

In Sunshine, the highest reading was 133·5° on the 27th.

On Ground, the lowest reading was 45·6° on the 3rd.

The Sea has risen to 65·4°

Lightning was seen on the 20th.

Total Rainfall since last June 18·335 inches ; the average of 10 years, 18·840 inches.

MAY.

The Dew-point, ranged between 50·2° on the 3rd and 64·0° on the 23rd.

In Sunshine, the highest reading was 136·6° on the 3rd

On Ground, the lowest reading was 47·4° on the 9th.

The Sea has risen to 70·0°.

Thunderstorms passed on the 5th and 6th.

Lightning was seen on the 9th and 10th.

Hail fell on the 5th.

Total Rainfall since last June 18·841 inches ; the average of 10 years, 19·601 inches.

JUNE.

The Dew-point ranged between 53·3° on the 14th and 71 3° on the 20th.

In Sunshine, the highest reading was 139·9° on the 29th.

On Ground, the lowest reading was 51·1° on the 1st.

The Sea has averaged to 74°.

Total Rainfall since last June 18·841 inches; the average of 10 years 19·601 inches.

JULY.

The Dew-point ranged between 53·7° on the 2nd, and 74·0° on the 31st.

In Sunshine, the highest reading was 159·0° on the 5th.

On Ground, the lowest reading was 59·4° on the 12th.

The Sea has risen to 82·5°.

Lightning was seen on the 6th.

AUGUST.

The Dew-point ranged between 73·9° on the 1st, and 62·5° on the 25th.

In Sunshine the highest reading was 144·6° on the 29th.

The Sea has averaged 80·0°.

Lightning was seen on the 18th, 19th, 23rd, and 26th.

Total Rainfall since last June 0·370 inches; the average of 12 years, 0·127 inches.

SEPTEMBER.

The Dew-point ranged between 72·4° on the 3rd, and 56·8° on the 24th.

In Sunshine the highest reading was 144·5° on the 18th.

On Ground, the lowest reading was 53 6° on the 25th.

The Sea has fallen to 76·2°, averaging 78·6°.

Thunderstorms passed on the 18th.

Lightning was seen on the 8th, 15th, 16th, 17th, 19th, 20th.

Total Rainfall since last June 0·495 inches; the average of 12 years, 1·292 inches.

OCTOBER.

The Dew-point ranged between 70·5° on the 11th, and 43·3° on the 19th.

In Sunshine, the highest reading was 135·1° on the 1st.

On Ground, the lowest reading was 47·3° on the 20th.

The Sea has fallen to 73·0° averaging 74·6°.

Thunderstorms passed on the 17th and 18th.

Lightning was seen on the 13th, 19th, and 22nd.

Total Rainfall since last June, 1·668 inches; the average of 12 years, 4·213 inches.

NOVEMBER.

The Dew-point ranged between 67·9° on the 1st, and 50·1° on the 25th.

In Sunshine, the highest reading was 130·1° on the 11th.

On Ground, the lowest reading was 51·1 on the 21st.

The Sea has fallen to 67·8°, averaging 70·4°.

Thunderstorms passed on the 12th, 14th, and 19th.

Lightning was seen on the 5th, 6th, 16th, 17th, 18th, 20th, 21st, 30th.

Total Rainfall since last June 3·459 inches; the average of 12 years, 7·631 inches

Mean temperature for the month is the highest of 12 years. Rain remarkably below the average.

DECEMBER.

The Dew-point ranged between 37·1° on the 9th, and 56·5° on the 17th.

In Sunshine, the highest reading was 115·8° on the 5th.

On Ground, the lowest reading was 38·0° on the 31st.

The Sea has fallen to 62·0°, averaging 64·9.

Thunderstorms passed on the 2nd, 4th, 20th, 21st.

Lightning was seen on the 1st and 15th.

Hail fell on the 9th, 21st, and 22nd.

Total Rainfall since last June, 6·977 inches; the average of 12 years, 11·897 inches.

## NOTES FOR THE YEAR.

The Dew-point ranged between 27·9° on February 19th, and 74·0° on July 31st.

In Sunshine, the highest reading was 159·0° on July 5th.

On Ground, the lowest reading was 31·7° on February 19th.

The Sea has ranged from 55·5° on January 30th, to 83·0° on September 3rd.

Thunderstorms passed on 16 days

Lightning was seen on 33 days.

Hail fell on 13 days.

---

## CORRIGENDA.

*In* Report for August, 1894,

*For* Mean Additional Weight of Vapour required for saturation (Average 10 years) .. 3·3 grains

*Read* .. .. .. .. 3·5 grains

*In* Report for November, 1894,

*For*—Fall of rain .. .. .. 4·559 inches

*Read* .. .. .. .. 4·599 inches

*In* Notes for the Year, 1894, (p. 79.)

*For*—The lowest temperature was on February 20th, 1851

*Read* .. .. .. February 20th, 1891

And (p. 84.)

*For*—The Sea has ranged from 56·8° on February 25th, to 79·5° on August 26th.

*Read*—The Sea has ranged from 56·8° on February 25th, to 81.3° on July 25th.