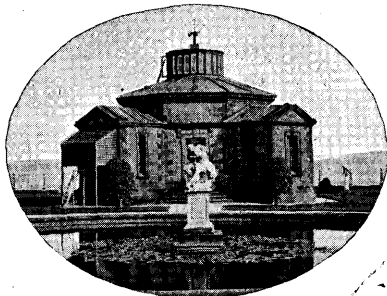
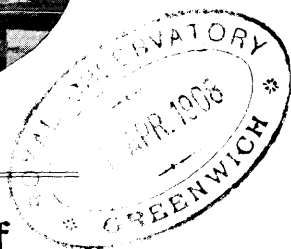


STONYHURST COLLEGE OBSERVATORY.

Lat. $53^{\circ} 50' 40''$ N. Long. $9^{\text{m}} 52^{\text{s}} 68$ W.
Height of the Barometer above the Sea, 381 feet.



(FOUNDED 1838.)



Results of Meteorological and Magnetical Observations, 1907.

With Report and Notes of the Director,

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

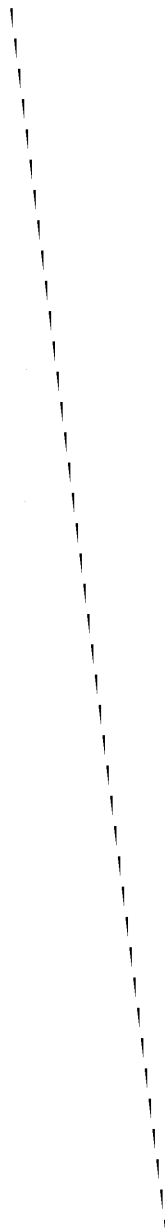
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PHILIP, SON & NEPHEW, LTD., PRINTERS, SOUTH CASTLE STREET.

1908.



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REPORT AND NOTES.

Meteorological.—The meteorological continuous records have been uninterrupted during the year, excepting only the photographic curve of the thermograph during the evening of October 14 for 4 hours, whilst the acetylene gas was being expelled from the pipes by coal gas. The latter has been found to be the more serviceable for general purposes in the Observatory.

The wind is recorded by a Robinson's Anemograph at about 45 feet above the ground. A velocity of 37 miles per hour and over is called a gale.

Bright sunshine is recorded by a Campbell-Stokes Recorder.

The Rain Gauge is a Beckley Self Recorder. Its receiving surface is 22 inches above the ground, and 377 feet above sea-level. The daily measures are taken at 10 a.m. for the preceding 24 hours. *Heavy rain*, noted in the monthly tabulations, signifies a fall of $\frac{1}{2}$ inch or more during the day.

The Barometer is a standard barometer of the pattern approved by the Meteorological Office. It is now mounted, with the photo-barograph, in the underground Magnetic chamber. Its cup is 363 feet above the sea-level. Its readings in the monthly tables are quoted for the density of mercury at 32° Fahr., and for the original position of the barometer at 381 feet above sea-level; and the mean pressures are corrected for diurnal range.

The Thermometers are the property of the Meteorological Office, and are annually compared with the Office-standards. They are mounted at 6 feet above the ground on the north side of the Observatory, enclosed in a Stevenson-Screen. All the readings are corrected for index errors, as determined by the Office-standards.

The *monthly mean temperature* is derived in two ways: 1st, from the mean of the highest and lowest daily readings corrected by the average difference between this mean and the true mean of the hourly tabulations; and 2nd, from the mean of the readings at 9 a.m. and 9 p.m. corrected in the same manner. Both corrections have been furnished by the Greenwich records, and are taken from the well-known Glaisher's tables. The *Adopted mean temperature* is the mean of these two results.

A casual reply to a correspondent, at the beginning of the year, explaining the methods of obtaining the mean temperature of a month, led to the unpleasant discovery that the above corrections had not been applied for some years past, between 1903 and 1906 inclusively. The corrections have, since, been applied; and the following table is inserted to show an example of the resulting mean temperature as obtained *with* and *without* the Glaisher corrections.

| MEAN TEMPERATURE. | | 1882. | | |
|--|---|-------|-------|-------|
| | | Jan. | June. | July. |
| True Mean by Hourly Tabulations | | 41·1 | 54·1 | 57·5 |
| (1) | By mean of Max. and Min. <i>with</i> Glaisher correction..... | 41·2 | 55·7 | 58·6 |
| (2) | By mean of Max. and Min. <i>without</i> correction..... | 41·4 | 57·5 | 60·5 |
| (3) | By 9 a.m. and 9 p.m. readings <i>with</i> correction..... | 40·6 | 52·8 | 56·6 |
| (4) | By 9 a.m. and 9 p.m. readings <i>without</i> correction..... | 39·9 | 53·1 | 56·7 |
| Adopted Mean Temp. <i>with</i> correction... | | 40·9 | 54·2 | 57·6 |
| ,, ,, <i>without</i> correction | | 40·7 | 55·3 | 58·6 |

The three months, Jan., June, July of the table were taken haphazard; and the results show the nearer approach to the true mean temperature obtained by the combined corrected figures opposite (1) and (3) than by the uncorrected figures of (2) and (4).

The preparation of this table led on to a re-examination of the entire series of meteorological entries of the last 60 years. The whole work has been carried out with the utmost care by Br. W. McKeon, S.J.; and the following is his voucher for the results:—

“The whole of the period 1903–6 has been carefully revised and corrected, including the hygrometrical table workings from the corrected data, and also the corresponding figures in the column of 60-year-means. So that now the tabulations of 1907 stand as they would have appeared had these corrections not been omitted,

“Moreover the whole Report has been thoroughly revised. A considerable number of clerical errors, mostly in the quotations of rainfall, and sunshine, and in the sections of Extreme Readings, have been discovered and corrected.

“With regard to the Report in general I may say with confidence that every single error has been expunged, and every figure and statement made, either regarding the year 1907 itself, or the 60 years' period of observation, is perfectly trustworthy.”—W. McK.

Some changes will be found in the form of the monthly tables, and several additional items. A 30 years' table of corrected Rainfall (1878–1907) is given at page 38, as a supplement to a similar table (1848–1877) printed

in the Results for 1878. Curves are added showing the annual variation over 60 years of four meteorological elements—viz., Mean Barometric pressure, Total wind mileage, Mean temperature, and total Rainfall, with a curve of Wolf's Sun Spot Relative-numbers, by Prof. Wolfer, Zurich, and printed in the Monthly Weather Review, April, 1902, of the U.S. Department of Agriculture, Washington.

The year has been, on the whole, an average year for Barometric pressure, Temperature, Rainfall and Wind-force. There have been no marked extremes of temperature, never above 77° Fahr., nor below 20°. The winter months have had their gales of wind:—two in January, one in February, two in March, one in November, and two in December; but nothing exceeding 50 miles an hour, which was reached at 11 p.m. on March 16th. In the summer months occasional distant thunder or lightning was heard or seen; but only one near and severe storm, on July 21, has been recorded.

The rainfall was only 3 inches above the annual average, notwithstanding the heavy fall in June. The wettest months of the year were June, August, December and March; and the finest months were September and April.

June was a most unsummerlike month, with the greatest rainfall, least sunshine, and lowest mean temperature on our June records. It was also a generally windy month, at an average velocity of $11\frac{1}{2}$ miles an hour—the greatest month-average of the year, and without any velocity greater than 29 miles.

Magnetical.—The magnetographs are of the Kew pattern ; but they were built before the introduction of the two-hourly time scale provided now by clock-worked shutters cutting off the light for 4 minutes at the even-numbered hours. For some years, shortly after the instruments were mounted, shutters were provided by an ingenious contrivance of the late Br. Hostage, S.J., worked by a subsidiary weight which was released by the barograph clock at the times of closing the barograph shutter. But it required the inventor to keep the gear in safely working order ; and the apparatus was removed a few years after his death in 1877. The time-scale is now provided with hand screens at 2 p.m., 4 p.m., and 10 a.m., the photographic papers being changed daily at noon.

The value of one centimetre ordinate of the bifilar curve is tested at least once a year by the method of deflections, to keep it at 0.0005 C.G.S. units. It has been for many years quite constant.

On the unifilar curve one centimetre subtends an angular turn of the suspended mirror through $11^{\circ}28'$ of arc ; and the ordinates are read off on a scale of one division to the arc-minute.

Four daily readings are taken from the unifilar and bifilar curves, the highest and lowest, and the readings at 4 a.m. and 4 p.m. ; but the V.F. balance has not yet given results sufficiently reliable for any other quotation than greater or less disturbance.

It has not yet been found possible, with our limited staff, to take hourly readings from the curves, or to observe for absolute measure of force more frequently than once a month.

But the horizontal direction, or Declination, is observed 4 times each month, at approximately equal intervals, and always, when possible, at 4 p.m. These measures have been corrected by the difference between the curve ordinate at the time of observation and the mean of the readings at 4 p.m. The corrections are usually small. They were introduced, beginning with January, in order to eliminate greater variations occasioned by concurrent magnetic storms. The reading of the photographic Baseline is derived monthly from the mean of the 4 p.m. readings compared with the mean of the 4 absolute measures.

No corrections have been applied to the absolute measures of force. The reading of the bifilar base line has been derived each month from the absolute measure of horizontal force and the general mean of the 4 daily curve-readings. These readings were found to give more concordant results, month by month, than those of the actual time-interval during which the experiments for absolute measure were carried out.

Except for occasional losses through variability of the lights, the magnetograph curves have been satisfactory, enough at least for the tabulation, but not all one could wish to see as photographic records. The instruments were dismantled in the middle of October, and readjusted; and the results since then have become all that could be wished.

On the table of magnetic disturbances (page 48) the following remarks may be of service. There is often some embarrassment in assigning the proper note of magnetic condition to the date. Overlapping of indications cannot

be wholly avoided ; and some allowance must be made for the subjective impressions of the Recorder—a variability of personal equation. But the general intention of the table is that a *calm* (c) shall mean a smooth curve ; *small* (s) a disturbance noteworthy only as opposed to a calm ; *moderate* (m) a disturbance not to be neglected for any comparison with other phenomena, solar or terrestrial, and worth a reference to the original curve ; *greater* (g) a decided storm ; and very great (v.g) needs no comment.

Corresponding tabulations are sent quarterly to the Meteorological Institute at De Bilt (Holland), for the International Committee on Terrestrial Magnetism. In these the significant notes are restricted to three—0, 1, 2. The general returns from the Bureau show considerable discordance between the interpretations of different authorities ; and it may be well to state the rule followed at this Observatory. The two important notes are held to be 0 and 2 : the former meaning a true calm, and the latter any disturbance worth comparing with other phenomena ; and the intervening note comprises all the rest.

On this list the notes are quoted for the civil day, and may therefore be found occasionally at variance with our own quotations, which are given for the Astronomical day (from noon to noon). It has not been thought well to make any change here ; because the convenience for tabulation is very great, when the curve, started at noon, stands for one day ; and the risk of clerical errors is notably less. For other entries it is only an already established custom that has hindered the adoption of the astronomical day as more suited to registration by curves which can always be started at noon and never at midnight.

Solar and Astro-physical.—The solar surface has been observed on all available days, and 198 drawings of spots and faculæ have been added to our collection. On one day only the surface was found quite free from spots.

The mean disc-area of the spots (in units of $\frac{1}{30000}$ th of the visible surface) appears at 5·8 ; and the mean daily range of magnetic Declination (in minutes of arc) at 14·7. And the following table shows an unexpected revival of solar activity and magnetic disturbance.

| | | | | | | |
|----------------------|------|------|------|------|------|------|
| Year | 1902 | 1903 | 1904 | 1905 | 1906 | 1907 |
| Spot area | 0·3 | 1·9 | 2·5 | 6·8 | 4·8 | 5·8 |
| Declination range... | 9·0 | 11·8 | 11·9 | 14·9 | 14·2 | 14·7 |

The greater spots have also been examined, both visually and photographically, with the large grating and with the 12 prism spectroscope.

Work with the two stellar spectrographs (the Hilger compound prism and the Thorp objective prism) has been suspended, pending an examination of the large collection of plates already obtained. But this examination has been rendered impossible by the long and laborious work, already mentioned, upon the meteorological records.

The new heliostat mentioned in our last report, and also a six-inch portrait lens, the gift of Mr. Whitelow, F.R.A.S., of Southport, have been mounted during the course of the year. But regular work with both instruments has been delayed by impediments experienced in the accurate running of the driving clocks. Sir Howard Grubb is surmounting those of the heliostat clock, and the Director, with the friendly help of Mr. Parkinson, of Blackburn, has so far improved the working of the

Equatorial clock, and the adjustments of the Whitelow camera, that probably no further difficulty will be experienced in long and repeated exposures of the same photographic plate to starry and nebulous regions of the sky.

These and other mechanical improvements have occupied a considerable part of the year; and many clear nights have been devoted to experimental work in connection with them.

The following papers were published during the year:—

“The Spectrum of Mira Ceti in December, 1906, as photographed at Stonyhurst College Observatory.” Monthly Notices, R.A.S., 67, 8. June, 1907.

“Note on the Visual Spectrum of Mira Ceti in December, 1906.” *Ibid.*

“On the connection between disturbed areas of the solar surface and the solar corona.” Report of the British Association. York, 1906.

“The variability in light of Mira Ceti and the Temperature of Sun-Spots.” *Astrophysical Journal*, 26, 2. September, 1907.

“The Stonyhurst discs for measuring the positions of Sun-Spots.” *Journal B.A.A.*, 18, 1. November, 1907.

“Problems of Solar Physics.” “The Observatory,” No. 380. February, 1907.

WALTER SIDGREAVES, S.J.,

DIRECTOR.

January, 1908.

METEOROLOGICAL REPORT.

JANUARY, 1907.

| Results of Observations taken during the Month. | | Mean for the last 60 years. | | | | | | |
|---|---------------------------------|-----------------------------|-----|------|-----|--------|--------|------|
| Mean Reading of the Barometer | inches 29·862 | 29·469 | | | | | | |
| Highest ,, ,, on the 23rd ... ,, | 30·553 | 30·287 | | | | | | |
| Lowest ,, ,, on the 2nd ... ,, | 28·577 | 28·597 | | | | | | |
| Range of Barometer Readings | ,, 1·976 | 1·690 | | | | | | |
| Highest Reading of a Max. Therm. on the 2nd... | 49·5 | 51·3 | | | | | | |
| Lowest Reading of a Min. Therm. on the 25th... | 20·1 | 21·1 | | | | | | |
| Range of Thermometer Readings..... | 29·4 | 30·2 | | | | | | |
| Mean of all the Highest Readings | 42·2 | 42·3 | | | | | | |
| Mean of all the Lowest Readings..... | 34·4 | 32·8 | | | | | | |
| Mean Daily Range | 7·8 | 9·5 | | | | | | |
| Deduced Mean Temp. (from mean of Max. and Min.) | 38·1 | 37·3 | | | | | | |
| Mean Temperature from Dry Bulb | 38·4 | 37·4 | | | | | | |
| Adopted Mean Temperature .. | 38·3 | 37·4 | | | | | | |
| Mean Temperature of Evaporation | 36·6 | 36·2 | | | | | | |
| Mean Temperature of Dew Point..... | 34·3 | 34·0 | | | | | | |
| Mean elastic force of Vapour | inches 0·198 | 0·197 | | | | | | |
| Mean weight of Vapour in a cub. ft. of air, grains | 2·3 | 2·4 | | | | | | |
| Mean additional weight required for saturation ,, | 0·4 | 0·4 | | | | | | |
| Mean degree of Humidity (saturation 100)..... | 86 | 80 | | | | | | |
| Mean weight of a cubic foot of air... .. | grains 555·8 | 549·7 | | | | | | |
| Mean amount of Cloud (0—10)..... | 8·4 | 7·8 | | | | | | |
| Fall of Rain | inches 2·995 | 4·135 | | | | | | |
| Greatest Rainfall in one day (1st) | ,, 0·600 | 0·772 | | | | | | |
| No. of days on which ·005 in. or more Rain fell... | 20 | 19·1 | | | | | | |
| No. of days in the month on which the prevailing Wind was | N | NE | E | SE | S | SW | W | NW |
| | 2 | 0 | 3 | 0 | 3 | 1 | 20 | 2 |
| | Mean Velocity in miles per hour | 14·3 | 0 | 10·5 | 0 | 5·8 | 16·3 | 10·9 | 9·1 |
| Total No. of miles for each Direction | 685 | 0 | 755 | 0 | 414 | 392 | 5220 | 435 |
| | | | | | | | Mean.* | |
| Total No. of miles registered | 7901 | | | | | 8303·1 | | |
| Greatest hourly velocity (29th, mid. Dir. N.W. by W.) | 40 | | | | | 42·7 | | |

* For the last 40 years.

JANUARY, 1907.

DIFFERENCES.

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

| | | | | | |
|------------------------------|-----|-----|-----|-----|-------------|
| Mean barometric pressure | ... | ... | ... | ... | + 0.393 in. |
| Monthly range | „ | ... | ... | ... | + 0.286 „ |
| Mean of highest temperatures | ... | ... | ... | ... | — 0.1° |
| Mean of lowest | „ | ... | ... | ... | + 1.6° |
| Mean daily range | „ | ... | ... | ... | — 1.7° |
| Adopted mean temperature | ... | ... | ... | ... | + 0.9° |
| Total rainfall | ... | ... | ... | ... | — 1.140 in. |

Ground frost on 2nd—4th, 11th, 18th, 19th, 22nd—31st. Snow on 2nd, 3rd, 22nd—24th, and 26th. Hail on 2nd, 28th and 29th. Gales of wind on 28th and 29th. Heavy rain on the 1st. Fog on 16th, 19th—21st, and 27th. Thunder on the 29th. Lunar halo on 25th and 27th.

EXTREME READINGS FOR JANUARY, During 60 Years.

| | | |
|--|-------------|------------|
| Highest reading of Barometer | 1896 (9th) | 30.597 in. |
| Lowest | 1884 (26th) | 27.803 „ |
| Highest temperature | 1887 (7th) | 59.9° |
| Lowest | 1881 (15th) | 4.6° |
| Highest adopted mean temperature | 1898 | 43.7° |
| Lowest | 1881 | 29.2° |
| Greatest fall of rain | 1852 | 8.147 in. |
| Least | 1881 | 0.472 „ |
| Greatest fall of rain in one day | 1886 (3rd) | 1.700 „ |
| Greatest No. of days on which .005 in. or more rain fell | 1890 | 30 |
| Least | †1850 | 8 |
| *Greatest hourly velocity of the wind | 1899 (12th) | 63 mls. |
| *Greatest No. of miles registered | 1890 | 11661 |
| *Least | 1881 | 4352 |

* Since 1867 only.

† And in other years.

FEBRUARY, 1907.

| Results of Observations taken during the Month. | | Mean for the last 60 years. |
|--|---------------|-----------------------------|
| Mean Reading of the Barometer | inches 29·555 | 29·505 |
| Highest ,, ,, on the 2nd ... ,, | 30·147 | 30·078 |
| Lowest ,, ,, on the 20th... ,, | 28·370 | 28·662 |
| Range of Barometer Readings | 1·777 | 1·416 |
| Highest Reading of a Max. Therm. on the 27th | 50·4 | 52·1 |
| Lowest Reading of a Min. Therm. on the 3rd ... | 20·6 | 21·9 |
| Range of Thermometer Readings..... | 29·8 | 30·2 |
| Mean of all the Highest Readings | 40·7 | 44·0 |
| Mean of all the Lowest Readings... .. | 31·1 | 33·2 |
| Mean Daily Range | 9·6 | 10·8 |
| Deduced Mean Temp. (from mean of Max. and Min.) | 35·5 | 38·0 |
| Mean Temperature from Dry Bulb | 35·8 | 38·1 |
| Adopted Mean Temperature..... | 35·7 | 38·1 |
| Mean Temperature of Evaporation | 33·9 | 36·6 |
| Mean Temperature of Dew Point..... | 31·2 | 34·4 |
| Mean elastic force of Vapour.....inches | 0·176 | 0·193 |
| Mean weight of Vapour in a cub. ft. of air, grains | 2·0 | 2·4 |
| Mean additional weight required for saturation ,, | 0·4 | 0·4 |
| Mean degree of Humidity (saturation 100)..... | 83 | 87 |
| Mean weight of a cubic foot of air | 553·1 | 549·1 |
| Mean amount of Cloud (0—10) | 7·1 | 7·6 |
| Fall of Rain | inches 3·515 | 3·453 |
| Greatest Rainfall in one day (16th)..... ,, | 1·070 | 0·747 |
| No. of days on which ·005 in. or more Rain fell... | 13 | 16·6 |

| | N | NE | E | SE | S | SW | W | NW |
|---|-----|-----|-----|----|-----|------|------|------|
| No. of days in the month on which the prevailing Wind was | 6 | 2 | 1 | 0 | 3 | 5 | 9 | 2 |
| Mean Velocity in miles per hour | 6·8 | 5·0 | 9·9 | 0 | 6·5 | 13·7 | 14·4 | 15·6 |
| Total No. of miles for each Direction | 973 | 240 | 238 | 0 | 471 | 1645 | 3102 | 751 |

| | Mean.* |
|--|--------|
| Total No. of miles registered | 7420 |
| Greatest hourly velocity (19th, 9 p.m. and mid. Dir. W.) | 45 |
| | 7586·5 |
| | 42·2 |

* For the last 40 years.

FEBRUARY, 1907.

DIFFERENCES.

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

| | | | | | |
|------------------------------|-----|-----|-----|-----|-------------|
| Mean barometric pressure | ... | ... | ... | ... | + 0.050 in. |
| Monthly range | „ | ... | ... | ... | + 0.361 „ |
| Mean of highest temperatures | ... | ... | ... | ... | — 3.3° |
| Mean of lowest | „ | ... | ... | ... | — 2.1° |
| Mean daily range | „ | ... | ... | ... | — 1.2° |
| Adopted mean temperature | ... | ... | ... | ... | — 2.4° |
| Total rainfall | ... | ... | ... | ... | + 0.062 in. |

Ground frost on 1st—14th, 20th—24th, 27th and 28th. Snow on 4th, 8th, 12th and 22nd. Hail on the 11th. Gales of wind on 17th, 19th and 20th. Heavy rain on 11th and 16th. Fog on 27th and 28th. Lightning on the 19th.

EXTREME READINGS FOR FEBRUARY, During 60 Years.

| | | | | |
|---|-------|-------------|-------|--------------------------|
| Highest reading of Barometer | ..... | 1902 (1st) | ..... | 30.476 in. |
| Lowest | „ | „ | ..... | 1900 (19th).....27.870 „ |
| Highest temperature | ..... | 1877 (8th) | ..... | 58.3° |
| Lowest | „ | ..... | ..... | 1902 (11th)..... 5.0° |
| Highest adopted mean temperature | ..... | 1869 | ..... | 44.0° |
| Lowest | „ | „ | ..... | 1855 28.6° |
| Greatest fall of rain | ..... | 1848 | ..... | 8.882 in. |
| Least | „ | ..... | ..... | 1858 0.306 „ |
| Greatest fall of rain in one day | ..... | 1869 (8th) | ..... | 1.829 „ |
| Greatest No. of days on which .005 in. or more rain fell | ..... | 1880 | ..... | 26 |
| Least | „ | „ | ..... | 1855 4 |
| *Greatest hourly velocity of the wind | ... | 1903 (27th) | ..... | 60 mls. |
| *Greatest No. of miles registered | ..... | 1868 | ..... | 12577 |
| *Least | „ | „ | ..... | 1886 4251 |

* Since 1867 only.

MARCH, 1907.

| Results of Observations taken during the Month. | | Mean for the last 60 years. | | | | | | |
|---|---------------------------------|-----------------------------------|---|-----|------|------|--------|--------|
| Mean Reading of the Barometer | 29·687 | 29·463 | | | | | | |
| Highest " " on the 11th ... " | 30·108 | 30·062 | | | | | | |
| Lowest " " on the 16th ... " | 28·556 | 28·634 | | | | | | |
| Range of Barometer Readings | 1·552 | 1·428 | | | | | | |
| Highest Reading of a Max. Therm. on the 31st | 63·1 | 57·2 | | | | | | |
| Lowest Reading of a Min. Therm. on the 5th .. | 27·1 | 22·8 | | | | | | |
| Range of Thermometer Readings..... | 36·0 | 34·4 | | | | | | |
| Mean of all the Highest Readings | 48·6 | 47·3 | | | | | | |
| Mean of all the Lowest Readings..... | 34·8 | 34·1 | | | | | | |
| Mean Daily Range | 13·8 | 13·2 | | | | | | |
| Deduced Mean Temp. (from mean of Max. and Min.) | 40·7 | 39·8 | | | | | | |
| Mean Temperature from Dry Bulb | 42·0 | 40·1 | | | | | | |
| Adopted Mean Temperature..... | 41·4 | 40·0 | | | | | | |
| Mean Temperature of Evaporation | 39·6 | 38·0 | | | | | | |
| Mean Temperature of Dew Point..... | 37·3 | 35·5 | | | | | | |
| Mean elastic force of Vapour.....inches | 0·224 | 0·207 | | | | | | |
| Mean weight of Vapour in a cub. ft. of air, grains | 2·6 | 2·4 | | | | | | |
| Mean additional weight required for saturation ,, | 0·5 | 0·5 | | | | | | |
| Mean degree of Humidity (saturation 100)..... | 86 | 85 | | | | | | |
| Mean weight of a cubic foot of air | 548·9 | 546·4 | | | | | | |
| Mean amount of Cloud (0—10) | 7·5 | 7·5 | | | | | | |
| Fall of Rain | 5·635 | 3·353 | | | | | | |
| Greatest Rainfall in one day (9th) | 1·140 | 0·781 | | | | | | |
| No. of days on which ·005 in. or more Rain fell... | 16 | 16·4 | | | | | | |
| No. of days in the month on which the prevailing Wind was | N | NE | E | SE | S | SW | W | NW |
| | 0 | 2 | 0 | 0 | 3 | 5 | 21 | 0 |
| | Mean Velocity in miles per hour | | | | | | | |
| 0 | 4·8 | 0 | 0 | 6·5 | 10·9 | 13·1 | 0 | |
| Total No. of miles for each Direction | 0 | 231 | 0 | 0 | 467 | 1311 | 6602 | 0 |
| | | | | | | | | Mean.* |
| Total No. of miles registered | 8611 | | | | | | 8664·7 | |
| Greatest hourly velocity (16th, 11 p.m. Dir. S. W. by S.)..... | 50 | | | | | | 42·2 | |

* For the last 40 years.

MARCH, 1907.

DIFFERENCES.

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

| | | |
|------------------------------|----------|-------------|
| Mean barometric pressure | ... .. | + 0.224 in. |
| Monthly range | „ | + 0.124 „ |
| Mean of highest temperatures | ... .. | + 1.3° |
| Mean of lowest | „ | + 0.7° |
| Mean daily range | „ | + 0.6° |
| Adopted mean temperature | ... .. | + 1.4° |
| Total rainfall | ... .. | + 2.282 in. |

The amount of Bright Sunshine, 168.6 hours, is the greatest on record for this month, being six-and-a-half hours above the previous record of March, 1893.

Ground frost on 1st, 3rd—7th, 9th—12th, 14th, 21st, 23rd—31st.
Snow on 8th—11th, and 13th. Hail on 8th and 13th. Gales of wind on 17th and 18th. Heavy rain on the 9th, 12th, 15th, 16th and 19th. Fog on 4th.

EXTREME READINGS FOR MARCH, During 60 Years.

| | | |
|---|---------------------------|------------|
| Highest reading of Barometer | 1852 (6th) | 30.401 in. |
| Lowest | „ „ 1897 (3rd)..... | 28.157 „ |
| Highest temperature | 1871 (25th) | 68.0° |
| Lowest | „ 1886 (6th)..... | 11.5° |
| Highest adopted mean temperature..... | 1871 | 44.0° |
| Lowest | „ „ †1855 | 35.6° |
| Greatest fall of rain..... | 1896 | 7.079 in. |
| Least | „ 1852 | 0.352 „ |
| Greatest fall of rain in one day..... | 1898 (17th) | 1.540 „ |
| Greatest No. of days on which .005 in. or more rain fell | 1861 | 28 |
| Least | „ „ „ 1852 | 3 |
| *Greatest hourly velocity of the wind ... | 1905 (15th)..... | 57 mls. |
| *Greatest No. of miles registered | 1903 | 12773 |
| *Least | „ „ „ 1892 | 5725 |

* Since 1867 only.

† And 1892.

APRIL, 1907.

| Results of Observations taken during the Month. | | Mean for the last 60 years. | | | | | | | | |
|---|--|-----------------------------|------|------|------|-----|------|--------|------|--|
| Mean Reading of the Barometer | inches 29·359 | 29·483 | | | | | | | | |
| Highest ,, ,, on the 24th ,, | 29·915 | 29·968 | | | | | | | | |
| Lowest ,, ,, on the 3rd ,, | 28·723 | 28·814 | | | | | | | | |
| Range of Barometer Readings | ,, 1·192 | 1·154 | | | | | | | | |
| Highest Reading of a Max. Therm. on the 2nd... | 61·9 | 65·5 | | | | | | | | |
| Lowest Reading of a Min. Therm. on the 18th... | 26·3 | 28·1 | | | | | | | | |
| Range of Thermometer Readings..... | 35·6 | 37·4 | | | | | | | | |
| Mean of all the Highest Readings | 50·4 | 55·3 | | | | | | | | |
| Mean of all the Lowest Readings..... | 37·8 | 37·7 | | | | | | | | |
| Mean Daily Range | 12·6 | 17·6 | | | | | | | | |
| Deduced Mean Temp. (from mean of Max. and Min.) | 42·6 | 44·1 | | | | | | | | |
| Mean Temperature from Dry Bulb | 44·1 | 44·6 | | | | | | | | |
| Adopted Mean Temperature..... | 43·4 | 44·5 | | | | | | | | |
| Mean Temperature of Evaporation | 40·9 | 41·7 | | | | | | | | |
| Mean Temperature of Dew Point..... | 37·9 | 38·2 | | | | | | | | |
| Mean elastic force of Vapour.....inches | 0·228 | 0·235 | | | | | | | | |
| Mean weight of Vapour in a cub. ft. of air, grains | 2·6 | 2·7 | | | | | | | | |
| Mean additional weight required for saturation ,, | 0·6 | 0·7 | | | | | | | | |
| Mean degree of Humidity (saturation 100)..... | 81 | 80 | | | | | | | | |
| Mean weight of a cubic foot of air | grains 540·5 | 542·1 | | | | | | | | |
| Mean amount of Cloud (0—10) | 7·7 | 6·8 | | | | | | | | |
| Fall of Rain | inches 1·795 | 2·444 | | | | | | | | |
| Greatest Rainfall in one day (6th) | ,, 0·450 | 0·573 | | | | | | | | |
| No. of days on which ·005 in. or more Rain fell... | 16 | 14·6 | | | | | | | | |
| No. of days in the month on which the prevailing Wind was | N | NE | E | SE | S | SW | W | NW | | |
| | 3 | 5 | 6 | 1 | 2 | 2 | 10 | 1 | | |
| Mean Velocity in miles per hour | 4·4 | 5·2 | 12·9 | 13·4 | 11·0 | 7·1 | 12·3 | 4·7 | | |
| Total No. of miles for each Direction | 315 | 626 | 1858 | 322 | 530 | 342 | 2961 | 112 | | |
| Total No. of miles registered | 7066 | | | | | | | Mean.* | | |
| | Greatest hourly velocity (6th, 2 a.m. Dir. S.) ... | | | | | | | 7574·7 | | |
| | | | | | | | 34 | | 36·9 | |

* For the last 40 years.

APRIL, 1907.

DIFFERENCES.

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

| | | | | | |
|------------------------------|-----|-----|-----|-----|-------------|
| Mean barometric pressure | ... | ... | ... | ... | — 0·124 in. |
| Monthly range | „ | ... | ... | ... | + 0·038 „ |
| Mean of highest temperatures | ... | ... | ... | ... | — 4·9° |
| Mean of lowest | „ | ... | ... | ... | + 0·1° |
| Mean daily range | „ | ... | ... | ... | — 5·0° |
| Adopted mean temperature | ... | ... | ... | ... | — 1·1° |
| Total rainfall | ... | ... | ... | ... | — 0·649 in. |

Ground frost on 1st, 4th, 5th, 7th—10th, 15th, 17th—20th, 22nd,
25th—28th, and 30th. Snow on 7th and 27th. Hail on 2nd, 7th
and 27th. Thunder on 2nd and 17th.

EXTREME READINGS FOR APRIL, During 60 Years.

| | | | | |
|---------------------------------------|-------|-------------|-------------|---------------|
| Highest reading of Barometer | ..... | 1887 (17th) | ..... | 30·251 in. |
| Lowest | „ „ | ..... | 1868 (20th) |28·358 „ |
| Highest temperature | ..... | 1852 (14th) | ..... | 74·1° |
| Lowest | „ | ..... | 1892 (13th) | 20·8° |
| Highest adopted mean temperature | ..... | 1865 | ..... | 48·5° |
| Lowest | „ „ | ..... | 1879 | 40·7° |
| Greatest fall of rain | ..... | 1867 | ..... | 5·672 in. |
| Least | „ | ..... | 1852 | 0·478 „ |
| Greatest fall of rain in one day | ..... | 1899 (9th) | ..... | 1·060 „ |
| Greatest No. of days on which | ..... | 1867 | ..... | 24 |
| or more rain fell | ..... | ..... | ..... | ..... |
| Least | „ „ | ..... | 1852 | 4 |
| *Greatest hourly velocity of the wind | ... | 1904 (10th) | ..... | 50 mls. |
| *Greatest No. of miles registered | ..... | 1904 | ..... | 11016 |
| *Least | „ „ | ..... | 1884 | 5047 |

* Since 1867 only.

MAY, 1907.

| Results of Observations taken during the Month. | | Mean for the last 60 years. | | | | | | | |
|---|---------------|-----------------------------|------|-----|------|------|------|--------|--|
| Mean Reading of the Barometer | inches 29.439 | 29.521 | | | | | | | |
| Highest ,, ,, on the 17th ... ,, | 29.894 | 29.959 | | | | | | | |
| Lowest ,, ,, on the 2nd ... ,, | 28.684 | 28.931 | | | | | | | |
| Range of Barometer Readings | 1.210 | 1.028 | | | | | | | |
| Highest Reading of a Max. Therm. on the 12th | 71.8 | 71.6 | | | | | | | |
| Lowest Reading of a Min. Therm. on the 22nd.. | 32.7 | 31.5 | | | | | | | |
| Range of Thermometer Readings.. | 39.1 | 40.1 | | | | | | | |
| Mean of all the Highest Readings | 55.3 | 59.5 | | | | | | | |
| Mean of all the Lowest Readings..... | 43.2 | 42.1 | | | | | | | |
| Mean Daily Range | 12.1 | 17.4 | | | | | | | |
| Deduced Mean Temp. (from mean of Max. and Min.) | 47.6 | 49.0 | | | | | | | |
| Mean Temperature from Dry Bulb | 49.1 | 49.6 | | | | | | | |
| Adopted Mean Temperature..... | 48.4 | 49.3 | | | | | | | |
| Mean Temperature of Evaporation | 46.1 | 46.1 | | | | | | | |
| Mean Temperature of Dew Point... | 43.6 | 42.5 | | | | | | | |
| Mean elastic force of Vapour.....inches | 0.284 | 0.275 | | | | | | | |
| Mean weight of Vapour in a cub. ft. of air, grains | 3.2 | 3.1 | | | | | | | |
| Mean additional weight required for saturation ,, | 0.6 | 0.9 | | | | | | | |
| Mean degree of Humidity (saturation 100)..... | 84 | 76 | | | | | | | |
| Mean weight of a cubic foot of air | grains 536.5 | 537.3 | | | | | | | |
| Mean amount of Cloud (0—10)..... | 8.9 | 7.1 | | | | | | | |
| Fall of Rain | inches 3.633 | 2.643 | | | | | | | |
| Greatest Rainfall in one day (30th) | ,, 0.920 | 0.624 | | | | | | | |
| No. of days on which .005 in. or more Rain fell... | 21 | 14.4 | | | | | | | |
| No. of days in the month on which the prevailing Wind was | N | NE | E | SE | S | SW | W | NW | |
| | 2 | 9 | 5 | 1 | 3 | 2 | 7 | 2 | |
| Mean Velocity in miles per hour | 7.2 | 6.5 | 9.4 | 5.8 | 19.7 | 15.7 | 9.6 | 11.3 | |
| Total No. of miles for each Direction | 344 | 1406 | 1133 | 140 | 1417 | 752 | 1615 | 542 | |
| Total No. of miles registered | 7349 | | | | | | | Mean.* | |
| | 7224.0 | | | | | | | 7224.0 | |
| Greatest hourly velocity (9th, 2 p.m. Dir. S.) ... | 35 | | | | | | | 34.2 | |

* For the last 40 years.

MAY, 1907.

DIFFERENCES.

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

| | | | | | |
|------------------------------|-----|-----|-----|-----|-------------|
| Mean barometric pressure | ... | ... | ... | ... | — 0·082 in. |
| Monthly range | „ | ... | ... | ... | + 0·182 „ |
| Mean of highest temperatures | ... | ... | ... | ... | — 4·2° |
| Mean of lowest | „ | ... | ... | ... | + 1·1° |
| Mean daily range | „ | ... | ... | ... | — 5·3° |
| Adopted mean temperature | ... | ... | ... | ... | — 0·9° |
| Total rainfall | ... | ... | ... | ... | + 0·990 in. |

Ground frost on 5th, 16th—18th, 20th—22nd, and 29th. Hail on 2nd and 4th. Heavy rain on 30th. Thunder on 9th, 12th and 24th. Lightning on 12th.

EXTREME READINGS FOR MAY, During 60 Years.

| | | | | |
|---|-------|-------------|-------------|---------------|
| Highest reading of Barometer | ..... | 1895 (2nd) | ..... | 30·217 in. |
| Lowest | „ „ | ..... | 1877 (28th) |28·559 „ |
| Highest temperature | ..... | 1864 (19th) | ..... | 82·5° |
| Lowest | „ | ..... | 1855 (4th) | 23·5° |
| Highest adopted mean temperature | ..... | 1848 | ..... | 55·1° |
| Lowest | „ „ | ..... | 1855 | 45·0° |
| Greatest fall of rain | ..... | 1886 | ..... | 6·178 in. |
| Least | „ | ..... | 1859 | 0·249 „ |
| Greatest fall of rain in one day | ..... | 1881 (5th) | ..... | 1·647 „ |
| Greatest No. of days on which '005 in. or more rain fell | ..... | †1860 | ..... | 22 |
| Least | „ „ „ | ..... | †1848 | 4 |
| *Greatest hourly velocity of the wind | ... | 1888 (2nd) | ..... | 49 mls. |
| *Greatest No. of miles registered | ..... | 1888 | ..... | 9648 |
| *Least | „ „ „ | ..... | 1889 | 5396 |

* Since 1867 only.

† And in other years.

JUNE, 1907.

| Results of Observations taken during the Month. | | Mean for the last 60 years. | | | | | | |
|---|--------|-----------------------------------|---|-----|------|--------|--------|----|
| Mean Reading of the Barometer | 29·366 | 29·551 | | | | | | |
| Highest " " on the 17th... " | 29·768 | 29·908 | | | | | | |
| Lowest " " on the 25th... " | 28·964 | 29·039 | | | | | | |
| Range of Barometer Readings | 0·804 | 0·869 | | | | | | |
| Highest Reading of a Max. Therm. on the 9th... | 71·1 | 77·4 | | | | | | |
| Lowest Reading of a Min. Therm. on the 25th... | 40·8 | 38·9 | | | | | | |
| Range of Thermometer Readings | 30·3 | 38·5 | | | | | | |
| Mean of all the Highest Readings | 58·2 | 65·8 | | | | | | |
| Mean of all the Lowest Readings..... | 47·4 | 48·0 | | | | | | |
| Mean Daily Range | 10·8 | 17·8 | | | | | | |
| Deduced Mean Temp. (from mean of Max. and Min.) | 51·0 | 55·1 | | | | | | |
| Mean Temperature from Dry Bulb | 51·9 | 55·3 | | | | | | |
| Adopted Mean Temperature..... | 51·5 | 55·2 | | | | | | |
| Mean Temperature of Evaporation | 49·2 | 52·0 | | | | | | |
| Mean Temperature of Dew Point..... | 46·9 | 48·5 | | | | | | |
| Mean elastic force of Vapour.....inches | 0·322 | 0·352 | | | | | | |
| Mean weight of Vapour in a cub. ft. of air, grains | 3·6 | 3·9 | | | | | | |
| Mean additional weight required for saturation ,, | 0·7 | 1·0 | | | | | | |
| Mean degree of Humidity (saturation 100)..... | 84 | 78 | | | | | | |
| Mean weight of a cubic foot of air .....grains | 531·6 | 531·1 | | | | | | |
| Mean amount of Cloud (0—10) | 8·8 | 7·3 | | | | | | |
| Fall of Rain | 8·705 | 3·461 | | | | | | |
| Greatest Rainfall in one day (19th) | 1·195 | 0·807 | | | | | | |
| No. of days on which ·005 in. or more Rain fell... | 27 | 15·3 | | | | | | |
| No. of days in the month on which the prevailing Wind was | N | NE | E | SE | S | SW | W | NW |
| | 0 | 2 | 0 | 1 | 6 | 11 | 10 | 0 |
| Mean Velocity in miles per hour | 0 | 5·0 | 0 | 9·5 | 9·8 | 10·7 | 15·1 | 0 |
| Total No. of miles for each Direction | 0 | 240 | 0 | 228 | 1415 | 2822 | 3624 | 0 |
| | | | | | | | Mean.* | |
| Total No. of miles registered .. | | | | | 8329 | 6294·7 | | |
| Greatest hourly velocity (10th, noon. Dir. S. by E.) | | | | | 29 | 30·7 | | |

* For the last 40 years.

JUNE, 1907.

DIFFERENCES.

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

| | | | | | |
|------------------------------|-----|-----|-----|-----|-------------|
| Mean barometric pressure | ... | ... | ... | ... | — 0·185 in. |
| Monthly range | „ | ... | ... | ... | — 0·065 „ |
| Mean of highest temperatures | ... | ... | ... | ... | — 7·6° |
| Mean of lowest | „ | ... | ... | ... | — 0·6° |
| Mean daily range | „ | ... | ... | ... | — 7·0° |
| Adopted mean temperature | ... | ... | ... | ... | — 3·7° |
| Total rainfall | ... | ... | ... | ... | + 5·244 in. |

The Rainfall in June, 8·705 inches, is the greatest on record for this month. It exceeds by 1·580 in. the previous record of June, 1848.

The Mean Temperature, and the amount of Bright Sunshine, are also the lowest on record for June.

Heavy rain on 2nd, 4th, 5th, 11th, 19th and 24th. Thunder on 5th, 12th and 29th. Thunder and lightning on the 9th and 10th.

EXTREME READINGS FOR JUNE, During 60 Years.

| | | | | |
|---------------------------------------|-------|-------------|-------|------------|
| Highest reading of the Barometer | ..... | 1874 (15th) | ..... | 30·219 in. |
| Lowest | „ | 1893 (23rd) | ..... | 28·813 „ |
| Highest temperature | ..... | 1893 (18th) | ..... | 88·7° |
| Lowest | „ | 1902 (9th) | ..... | 32·0° |
| Highest adopted mean temperature | ..... | 1858 | ..... | 59·0° |
| Lowest | „ | 1907 | ..... | 51·5° |
| Greatest fall of rain | ..... | 1907 | ..... | 8·705 in. |
| Least | „ | 1887 | ..... | 0·525 „ |
| Greatest fall of rain in one day | ..... | 1857 (8th) | ..... | 2·093 „ |
| Greatest No. of days on which | ..... | 1907 | ..... | 27 |
| or more rain fell | ..... | 1887 | ..... | 4 |
| *Greatest hourly velocity of the wind | ... | 1897 (16th) | ..... | 45 mls. |
| *Greatest No. of miles registered | ..... | 1877 | ..... | 8384 |
| *Least | „ | 1884 | ..... | 4507 |

* Since 1867 only.

JULY, 1907.

| Results of Observations taken during the Month. | | Mean for the last 60 years. |
|--|--------|-----------------------------------|
| Mean Reading of the Barometer | 29·608 | 29·521 |
| Highest " " on the 16th... " | 30·080 | 29·894 |
| Lowest " " on the 4th ... " | 29·087 | 29·019 |
| Range of Barometer Readings | 0·993 | 0·875 |
| Highest Reading of a Max. Therm. on the 17th | 77·2 | 78·7 |
| Lowest Reading of a Min. Therm. on the 1st ... | 40·3 | 42·2 |
| Range of Thermometer Readings..... | 36·9 | 36·5 |
| Mean of all the Highest Readings..... | 62·9 | 67·9 |
| Mean of all the Lowest Readings..... | 49·7 | 50·8 |
| Mean Daily Range | 13·2 | 17·1 |
| Deduced Mean Temp. (from mean of Max. and Min.) | 54·4 | 57·8 |
| Mean Temperature from Dry Bulb | 56·3 | 57·8 |
| Adopted Mean Temperature..... | 55·4 | 57·9 |
| Mean Temperature of Evaporation | 52·6 | 54·8 |
| Mean Temperature of Dew Point... .. | 49·9 | 52·1 |
| Mean elastic force of Vapour.....inches | 0·361 | 0·389 |
| Mean weight of Vapour in a cub. ft. of air, grains | 4·0 | 4·4 |
| Mean additional weight required for saturation ,, | 0·9 | 1·0 |
| Mean degree of Humidity (saturation 100) | 83 | 81 |
| Mean weight of a cubic foot of air | 531·6 | 527·5 |
| Mean amount of Cloud (0—10) | 6·4 | 7·5 |
| Fall of Rain | 3·303 | 3·981 |
| Greatest Rainfall in one day (4th) | 0·590 | 0·868 |
| No. of days on which ·005 in. or more Rain fell... | 17 | 16·6 |

| No. of days in the month on which the prevailing Wind was | N | NE | E | SE | S | SW | W | NW |
|--|---|----|---|----|---|----|---|----|
| | | 2 | 7 | 2 | 0 | 3 | 5 | 11 | 1 |

| | | | | | | | | |
|--|-----|-----|-----|---|-----|-----|------|------|
| Mean Velocity in miles per hour | 5·5 | 4·9 | 6·5 | 0 | 5·3 | 5·4 | 9·6 | 12·8 |
| Total No. of miles for each Direction | 265 | 816 | 314 | 0 | 384 | 652 | 2538 | 307 |

| | Mean.* |
|---|--------|
| Total No. of miles registered | 5276 |
| Greatest hourly velocity (31st, 4 p.m. Dir. W.) | 25 |
| | 6565·4 |
| | 29·6 |

* For the last 40 years.

JULY, 1907.

DIFFERENCES.

The signs + and -- mean respectively above and below the
MONTHLY average.

| | | | | | |
|------------------------------|-----|-----|-----|-----|-------------|
| Mean barometric pressure | ... | ... | ... | ... | + 0·087 in. |
| Monthly range | „ | ... | ... | ... | + 0·118 „ |
| Mean of highest temperatures | „ | ... | ... | ... | — 5·0° |
| Mean of lowest | „ | ... | ... | ... | — 1·1° |
| Mean daily range | „ | ... | ... | ... | — 3·9° |
| Adopted mean temperature | ... | ... | ... | ... | — 2·5° |
| Total rainfall | ... | ... | ... | ... | — 0·678 in. |

Ground frost on 1st and 11th. Heavy rain on the 4th and 21st.
Thunder and lightning on 4th. Violent thunderstorm on the 21st.

EXTREME READINGS FOR JULY, During 60 Years.

| | | |
|---|-------------|------------|
| Highest reading of Barometer | 1868 (24th) | 30·112 in. |
| Lowest „ „ | 1877 (15th) | 28·564 „ |
| Highest temperature | 1901 (20th) | 89·0° |
| Lowest „ „ | 1857 (1st) | 36·0° |
| Highest adopted mean temperature | 1901 | 63·2° |
| Lowest „ „ | 1888 | 54·5° |
| Greatest fall of rain | 1888 | 8·475 in. |
| Least „ „ | 1868 | 0·669 „ |
| Greatest fall of rain in one day | 1888 (2nd) | 2·482 „ |
| Greatest No. of days on which ·005 in. or more rain fell | †1861 | 27 |
| Least „ „ „ | †1863 | 8 |
| *Greatest hourly velocity of the wind | 1892 (8th) | 44 mls. |
| *Greatest No. of miles registered | 1877 | 8288 |
| *Least „ „ „ | 1872 | 4668 |

* Since 1867 only.

† And in other years.

AUGUST, 1907.

| Results of Observations taken during the Month. | | Mean for the last 60 years. | | | | | | |
|---|---|-----------------------------|---|----|------|------|------|--------|
| Mean Reading of the Barometer | inches 29·503 | 29·494 | | | | | | |
| Highest „ „ on the 21st... „ | 29·920 | 29·890 | | | | | | |
| Lowest „ „ on the 15th... „ | 29·138 | 28·951 | | | | | | |
| Range of Barometer Readings | „ 0·782 | 0·939 | | | | | | |
| Highest Reading of a Max. Therm. on the 4th... | 67·9 | 76·8 | | | | | | |
| Lowest Reading of a Min. Therm. on the 30th... | 33·3 | 41·5 | | | | | | |
| Range of Thermometer Readings..... | 28·6 | 35·3 | | | | | | |
| Mean of all the Highest Readings | 60·7 | 66·9 | | | | | | |
| Mean of all the Lowest Readings..... | 49·5 | 50·5 | | | | | | |
| Mean Daily Range | 11·2 | 16·4 | | | | | | |
| Deduced Mean Temp. (from Mean of Max. and Min.) | 53·4 | 57·0 | | | | | | |
| Mean Temperature from Dry Bulb | 56·2 | 57·6 | | | | | | |
| Adopted Mean Temperature..... | 54·8 | 57·3 | | | | | | |
| Mean Temperature of Evaporation | 52·5 | 54·5 | | | | | | |
| Mean Temperature of Dew Point..... | 50·3 | 51·7 | | | | | | |
| Mean elastic force of Vapour.....inches | 0·364 | 0·386 | | | | | | |
| Mean weight of Vapour in a cub. ft. of air, grains | 4·1 | 4·3 | | | | | | |
| Mean additional weight required for saturation „ | 0·8 | 0·9 | | | | | | |
| Mean degree of Humidity (saturation 100)..... | 85 | 82 | | | | | | |
| Mean weight of a cubic foot of air.....grains | 530·3 | 527·5 | | | | | | |
| Mean amount of Cloud (0—10) | 7·9 | 7·4 | | | | | | |
| Fall of Rain | inches 6·210 | 5·080 | | | | | | |
| Greatest Rainfall in one day (7th)..... „ | 1·410 | 1·068 | | | | | | |
| No. of days on which ·005 in. or more Rain fell... | 26 | 18·4 | | | | | | |
| No. of days in the month on which the prevailing Wind was | N | NE | E | SE | S | SW | W | NW |
| | 1 | 0 | 0 | 0 | 1 | 5 | 24 | 0 |
| Mean Velocity in miles per hour | 4·1 | 0 | 0 | 0 | 12·7 | 11·4 | 10·5 | 0 |
| Total No. of miles for each Direction | 99 | 0 | 0 | 0 | 305 | 1368 | 6076 | 0 |
| Total No. of miles registered | 7848 | | | | | | | Mean.* |
| | Greatest hourly velocity (4th and 7th, 1 p.m. and 8 a.m. Dir. S.S.W. and W. respectively) ... | | | | | | | 28 | 32·4 |

* For the last 40 years.

AUGUST, 1907.

DIFFERENCES.

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

| | | | | | |
|------------------------------|-----|-----|-----|-----|-------------|
| Mean barometric pressure | ... | ... | ... | ... | + 0·009 in. |
| Monthly range | „ | ... | ... | ... | — 0·157 „ |
| Mean of highest temperatures | ... | ... | ... | ... | — 6·2° |
| Mean of lowest | „ | ... | ... | ... | — 1·0° |
| Mean daily range | „ | ... | ... | ... | — 5·2° |
| Adopted mean temperature | ... | ... | ... | ... | — 2·5° |
| Total rainfall | ... | ... | ... | ... | + 1·130 in. |

Heavy rain on the 7th, 8th, 14th, 15th and 22nd. Solar halo on the 23rd and 24th.

EXTREME READINGS FOR AUGUST, During 60 Years.

| | | | | |
|---------------------------------------|-------|-------------|-------------|---------------|
| Highest reading of Barometer | ..... | 1874 (21st) | ..... | 30·114 in. |
| Lowest | „ „ | ..... | 1903 (15th) |28·492 „ |
| Highest temperature | ..... | 1868 (2nd) | ..... | 88·0° |
| Lowest | „ „ | ..... | 1887 (13th) | 33·4° |
| Highest adopted mean temperature | ..... | 1899 | ..... | 61·7° |
| Lowest | „ „ | ..... | 1848 | 52·5° |
| Greatest fall of rain | ..... | 1891 | ..... | 9·869 in. |
| Least | „ „ | ..... | 1871 | 2·085 „ |
| Greatest fall of rain in one day | ..... | 1857 (7th) | ..... | 2·333 „ |
| Greatest No. of days on which | ..... | 1891 | ..... | 27 |
| or more rain fell | ..... | 1880 | ..... | 6 |
| Least | „ „ „ | ..... | 1880 | 6 |
| *Greatest hourly velocity of the wind | ... | 1903 (31st) | ..... | 45 mls. |
| *Greatest No. of miles registered | ..... | 1903 | ..... | 8486 |
| *Least | „ „ „ | ..... | 1884 | 4060 |

* Since 1867 only.

SEPTEMBER, 1907.

| Results of Observations taken during the Month. | | Mean for the last 60 years. | | | | | | |
|--|---------------|-----------------------------------|-----|----|------|------|--------|----|
| Mean Reading of the Barometer | inches 29·699 | 29·534 | | | | | | |
| Highest ,, ,, on the 22nd... ,, | 30·104 | 30·028 | | | | | | |
| Lowest ,, ,, on the 2nd ... ,, | 29·010 | 28·868 | | | | | | |
| Range of Barometer Readings | 1·094 | 1·160 | | | | | | |
| Highest Reading of a Max. Therm. on the 10th... | 68·6 | 72·4 | | | | | | |
| Lowest Reading of a Min. Therm. on the 4th ... | 33·3 | 36·4 | | | | | | |
| Range of Thermometer Readings..... | 35·3 | 36·0 | | | | | | |
| Mean of all the Highest Readings | 61·9 | 62·4 | | | | | | |
| Mean of all the Lowest Readings..... | 48·2 | 47·1 | | | | | | |
| Mean Daily Range | 13·7 | 15·3 | | | | | | |
| Deduced Mean Temp. (from mean of Max. and Min.) | 53·8 | 53·5 | | | | | | |
| Mean Temperature from Dry Bulb | 55·4 | 54·2 | | | | | | |
| Adopted Mean Temperature | 54·6 | 53·9 | | | | | | |
| Mean Temperature of Evaporation | 51·8 | 51·1 | | | | | | |
| Mean Temperature of Dew Point..... | 49·1 | 48·3 | | | | | | |
| Mean elastic force of Vapour.....inches | 0·348 | 0·339 | | | | | | |
| Mean weight of Vapour in a cub. ft. of air, grains | 4·0 | 4·0 | | | | | | |
| Mean additional weight required for saturation ,, | 0·8 | 0·9 | | | | | | |
| Mean degree of Humidity (saturation 100)..... | 81 | 81 | | | | | | |
| Mean weight of a cubic foot of air.....grains | 534·1 | 532·4 | | | | | | |
| Mean amount of Cloud (0—10) | 6·1 | 6·8 | | | | | | |
| Fall of Rain | inches 1·160 | 4·368 | | | | | | |
| Greatest Rainfall in one day (4th)..... ,, | 0·590 | 0·968 | | | | | | |
| No. of days on which ·005 in. or more Rain fell... | 6 | 16·8 | | | | | | |
| No. of days in the month on which the prevailing Wind was | N | NE | E | SE | S | SW | W | NW |
| | 4 | 9 | 1 | 0 | 2 | 5 | 9 | 0 |
| Mean Velocity in miles per hour | 4·6 | 5·2 | 2·8 | 0 | 11·1 | 8·3 | 6·4 | 0 |
| Total No. of miles for each Direction | 442 | 1113 | 67 | 0 | 535 | 1000 | 1373 | 0 |
| | | Mean.* | | | | | | |
| Total No. of miles registered | | 4530 | | | | | 6228·9 | |
| Greatest hourly velocity (2nd, 9 a.m. Dir. S.) ... | | 28 | | | | | 33·5 | |

* For the last 40 years.

SEPTEMBER, 1907.

DIFFERENCES.

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

| | | | | | |
|------------------------------|-----|-----|-----|-----|-------------|
| Mean barometric pressure | ... | ... | ... | ... | + 0·165 in. |
| Monthly range | „ | ... | ... | ... | — 0·066 „ |
| Mean of highest temperatures | ... | .. | ... | ... | — 0·5° |
| Mean of lowest | „ | ... | ... | ... | + 1·1° |
| Mean daily range | „ | ... | ... | ... | — 1·6° |
| Adopted mean temperatures | ... | ... | ... | ... | + 0·7° |
| Total rainfall | ... | ... | ... | ... | — 3·208 in. |

Heavy rain on the 4th. Fog on the 8th, 13th, 19th, 20th and
21st. Thunder on the 26th. Solar halo on the 3rd and 4th.

EXTREME READINGS FOR SEPTEMBER, During 60 Years.

| | | | | |
|---|--------|-------------|--------------|---------------|
| Highest reading of Barometer | ..... | 1851 (15th) | ..... | 30·274 in. |
| Lowest | „ „ | ..... | 1896 (25th) |28·314 „ |
| Highest temperature | ..... | 1868 (6th) | ..... | 85·0° |
| Lowest | „ „ | ..... | †1885 (25th) | 29·8° |
| Highest adopted mean temperature | ..... | 1865 | ..... | 59·1° |
| Lowest | „ „ | ..... | 1863 | 50·9° |
| Greatest fall of rain | ..... | 1869 | ..... | 9·539 in. |
| Least | „ „ | ..... | 1894 | 0·801 „ |
| Greatest fall of rain in one day | ..... | 1889 (26th) | ..... | 2·060 „ |
| Greatest No. of days on which ·005 in. or more rain fell | ..... | 1866 | ..... | 27 „ |
| Least | „ „ „ | ..... | †1851 | 6 |
| *Greatest hourly velocity of the wind | ... .. | 1875 (26th) | ..... | 53 mls. |
| *Greatest No. of miles registered | ..... | 1869 | ..... | 9053 |
| *Least | „ „ „ | ..... | 1888 | 3261 |

* Since 1867 only.

† And in other years.

OCTOBER, 1907.

| Results of Observations taken during the Month. | | Mean for the last 60 years. | | | | | | | | |
|---|---|-----------------------------|-----|------|------|------|-----|--------|------|--|
| Mean Reading of the Barometer | inches 29·205 | 29·430 | | | | | | | | |
| Highest ,, ,, on the 4th ... ,, | 29·670 | 30·018 | | | | | | | | |
| Lowest ,, ,, on the 15th... ,, | 28·618 | 28·658 | | | | | | | | |
| Range of Barometer Readings | 1·052 | 1·360 | | | | | | | | |
| Highest Reading of a Max. Therm. on the 1st ... | 63·1 | 64·1 | | | | | | | | |
| Lowest Reading of a Min. Therm. on the 24th ... | 30·3 | 29·1 | | | | | | | | |
| Range of Thermometer Readings..... | 32·8 | 35·0 | | | | | | | | |
| Mean of all the Highest Readings | 53·6 | 54·5 | | | | | | | | |
| Mean of all the Lowest Readings..... | 43·0 | 41·6 | | | | | | | | |
| Mean Daily Range | 10·6 | 12·9 | | | | | | | | |
| Deduced Mean Temp.(from mean of Max. and Min.) | 47·3 | 47·1 | | | | | | | | |
| Mean Temperature from Dry Bulb | 49·2 | 47·7 | | | | | | | | |
| Adopted Mean Temperature | 48·3 | 47·4 | | | | | | | | |
| Mean Temperature of Evaporation | 46·3 | 45·3 | | | | | | | | |
| Mean Temperature of Dew Point..... | 44·1 | 42·9 | | | | | | | | |
| Mean elastic force of Vapour.....inches | 0·290 | 0·277 | | | | | | | | |
| Mean weight of vapour in a cub. ft. of air, grains | 3·3 | 3·2 | | | | | | | | |
| Mean additional weight required for saturation ,, | 0·5 | 0·6 | | | | | | | | |
| Mean degree of Humidity (saturation 100)..... | 86 | 84 | | | | | | | | |
| Mean weight of a cubic foot of air.....grains | 532·2 | 537·6 | | | | | | | | |
| Mean amount of Cloud (0—10) | 7·3 | 7·4 | | | | | | | | |
| Fall of Rain | inches 3·864 | 5·093 | | | | | | | | |
| Greatest Rainfall in one day (5th)..... | ,, 0·640 | 0·979 | | | | | | | | |
| No. of days on which ·005 in. or more Rain fell... | 22 | 19·2 | | | | | | | | |
| No. of days in the month on which the prevailing Wind was | N | NE | E | SE | S | SW | W | NW | | |
| | 3 | 8 | 2 | 1 | 8 | 6 | 2 | 1 | | |
| Mean Velocity in miles per hour | 2·8 | 8·0 | 7·7 | 10·0 | 14·6 | 8·3 | 4·6 | 10·2 | | |
| Total No. of miles for each Direction | 205 | 1539 | 370 | 239 | 2798 | 1197 | 218 | 244 | | |
| Total No. of miles registered | 6810 | | | | | | | Mean.* | | |
| | Greatest hourly velocity (18th, 3 p.m. Dir. S. by E.) | | | | | | | 7127·2 | | |
| | | | | | | | 33 | | 39·1 | |

* For the last 40 years.

OCTOBER, 1907.

DIFFERENCES.

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

| | | | | | |
|------------------------------|-----|-----|-----|-----|-------------|
| Mean barometric pressure | ... | ... | ... | ... | — 0·225 in. |
| Monthly range | „ | ... | ... | ... | — 0·308 „ |
| Mean of highest temperatures | ... | ... | ... | ... | — 0·9° |
| Mean of lowest | „ | ... | ... | ... | + 1·4° |
| Mean daily range | „ | ... | ... | ... | — 2·3° |
| Adopted mean temperature | ... | ... | ... | ... | + 0·9° |
| Total rainfall | ... | ... | ... | ... | — 1·229 in. |

Ground frost on the 8th, 16th, 24th, 25th, 27th and 28th. Heavy rain on the 5th. Fog on the 5th, 22nd and 27th. Thunder on the 1st. Solar halo on the 6th, 7th and 9th.

EXTREME READINGS FOR OCTOBER, During 60 Years.

| | | | | |
|---|--------|-------------|-------------|---------------|
| Highest reading of Barometer | ..... | 1884 (5th) | ..... | 30·306 in. |
| Lowest | „ „ | ..... | 1862 (19th) |28·139 „ |
| Highest temperature | ..... | 1869 (9th) | ..... | 72·8° |
| Lowest | „ | ..... | 1895 (28th) | 17·8° |
| Highest adopted mean temperature |† | 1861 | ..... | 51·6° |
| Lowest | „ „ | ..... | 1895 | 42·8° |
| Greatest fall of rain | ..... | 1870 | ..... | 13·437 in. |
| Least | „ | ..... | 1856 | 1·328 „ |
| Greatest fall of rain in one day | ..... | 1870 (8th) | ..... | 2·529 „ |
| Greatest No. of days on which ·005 in. or more rain fell | ..... | 1903 | ..... | 29 |
| Least | „ „ „ | ..... | 1864 | 10 |
| *Greatest hourly velocity of the wind | ... | 1877 (15th) | ..... | 52 mls. |
| *Greatest No. of miles registered | ..... | 1874 | ..... | 9818 |
| *Least | „ „ „ | ..... | 1882 | 5306 |

* Since 1867 only.

† And in other years.

NOVEMBER, 1907.

| Results of Observations taken during the Month. | | Mean for the last 60 years. | | | | | | | |
|---|---------------|-----------------------------|------|----|------|-----|-----|--------|--|
| Mean Reading of the Barometer | inches 29·532 | 29·474 | | | | | | | |
| Highest ,, ,, on the 30th... ,, | 30·087 | 30·070 | | | | | | | |
| Lowest ,, ,, on the 26th... ,, | 28·590 | 28·567 | | | | | | | |
| Range of Barometer Readings | 1·497 | 1·503 | | | | | | | |
| Highest Reading of a Max. Therm. on the 2nd... | 55·0 | 55·9 | | | | | | | |
| Lowest Reading of a Min. Therm. on the 30th... | 25·1 | 25·5 | | | | | | | |
| Range of Thermometer Readings..... | 29·9 | 30·4 | | | | | | | |
| Mean of all the Highest Readings | 47·2 | 47·4 | | | | | | | |
| Mean of all the Lowest Readings..... | 37·6 | 36·6 | | | | | | | |
| Mean Daily Range | 9·6 | 10·8 | | | | | | | |
| Deduced Mean Temp. (from mean of Max. and Min.) | 42·0 | 41·6 | | | | | | | |
| Mean Temperature from Dry Bulb | 43·8 | 42·0 | | | | | | | |
| Adopted Mean Temperature | 42·9 | 41·8 | | | | | | | |
| Mean Temperature of Evaporation | 41·4 | 39·7 | | | | | | | |
| Mean Temperature of Dew Point..... | 39·6 | 38·3 | | | | | | | |
| Mean elastic force of Vapour.....inches | 0·244 | 0·233 | | | | | | | |
| Mean weight of Vapour in a cub. ft. of air, grains | 2·8 | 2·7 | | | | | | | |
| Mean additional weight required for saturation ,, | 0·4 | 0·4 | | | | | | | |
| Mean degree of Humidity (saturation 100)..... | 88 | 87 | | | | | | | |
| Mean weight of a cubic foot of air.....grains | 544·3 | 544·8 | | | | | | | |
| Mean amount of Cloud (0—10) | 7·5 | 7·5 | | | | | | | |
| Fall of Rain | inches 3·342 | 4·378 | | | | | | | |
| Greatest Rainfall in one day (23rd) | ,, 0·465 | 0·973 | | | | | | | |
| No. of days on which ·005 in. or more Rain fell... | 17 | 17·7 | | | | | | | |
| No. of days in the month on which the prevailing Wind was | N | NE | E | SE | S | SW | W | NW | |
| | 1 | 8 | 4 | 0 | 6 | 4 | 4 | 3 | |
| Mean Velocity in miles per hour | 2·2 | 4·5 | 13·0 | 0 | 10·1 | 6·3 | 8·3 | 11·0 | |
| Total No. of miles for each Direction | 52 | 867 | 1250 | 0 | 1454 | 601 | 800 | 790 | |
| Total No. of miles registered | 5814 | | | | | | | Mean.* | |
| | 7355·2 | | | | | | | | |
| Greatest hourly velocity (13th, 4 a.m. Dir. W.) | 44 | | | | | | | 42·5 | |

* For the last 40 years.

NOVEMBER, 1907.

DIFFERENCES.

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

| | | | | | |
|------------------------------|-----|-----|-----|-----|-------------|
| Mean barometric pressure | ... | ... | ... | ... | + 0·058 in. |
| Monthly range | „ | ... | ... | ... | — 0·006 „ |
| Mean of highest temperatures | ... | .. | ... | ... | — 0·2° |
| Mean of lowest | „ | ... | ... | ... | + 1·0° |
| Mean daily range | „ | ... | ... | ... | — 1·2° |
| Adopted mean temperature | ... | ... | ... | ... | + 1·1° |
| Total rainfall | ... | ... | ... | ... | — 1·036 in. |

Ground frost on the 11th, 12th, 15th, 16th, 18th—27th, 29th and 30th. Hoar frost on 16th, 25th and 30th. Snow on 23rd, 25th and 26th. Hail on 23rd, 24th, 26th and 27th. Gale of wind on the 13th. Fog on the 5th, 9th, 16th, 20th, 21st, 25th and 30th. Lightning on the 12th. Lunar halo on the 12th, 13th and 20th. Solar halo on the 21st.

EXTREME READINGS FOR NOVEMBER, During 60 Years.

| | | | |
|---|------------|------------------------|------------|
| Highest reading of Barometer | ..... | 1857 (12th)..... | 30·350 in. |
| Lowest | „ „ | 1891 (11th)..... | 27·938 „ |
| Highest temperature | ..... | 1900 (1st) | 62·4° |
| Lowest | „ | 1901 (15th)..... | 17·5° |
| Highest adopted mean temperature..... | †1881..... | ..... | 47·0° |
| Lowest | „ „ | 1851..... | 36·7° |
| Greatest fall of rain | ..... | 1866..... | 9·026 in. |
| Least | „ | 1855..... | 1·158 „ |
| Greatest fall of rain in one day..... | ..... | 1866 (16th)..... | 3·700 „ |
| Greatest No. of days on which ·005 in. or more rain fell | ..... | 1872 | 27 |
| Least | „ „ „ | 1848..... | 6 |
| *Greatest hourly velocity of the wind ... | ..... | 1887 (1st) | 62 mls. |
| *Greatest No. of miles registered | ..... | 1888..... | 12813 |
| *Least | „ „ „ | 1870..... | 4951 |

* Since 1867 only.

† And in other years.

DECEMBER, 1907.

| Results of Observations taken during the Month. | | Mean for the last 60 years. | | | | | | | |
|--|---------------|-----------------------------|------|----|------|------|------|--------|--|
| Mean Reading of the Barometer | inches 29·276 | 29·451 | | | | | | | |
| Highest ,, ,, on the 1st ... ,, | 30·012 | 30·080 | | | | | | | |
| Lowest ,, ,, on the 13th... ,, | 28·246 | 28·557 | | | | | | | |
| Range of Barometer Readings | ,, 1·766 | 1·523 | | | | | | | |
| Highest Reading of a Max. Therm. on the 29th... | 51·0 | 53·1 | | | | | | | |
| Lowest Reading of a Min. Therm. on the 15th ... | 28·3 | 20·6 | | | | | | | |
| Range of Thermometer Readings..... | 22·7 | 32·5 | | | | | | | |
| Mean of all the Highest Readings | 43·4 | 43·2 | | | | | | | |
| Mean of all the Lowest Readings..... | 35·7 | 33·2 | | | | | | | |
| Mean Daily Range | 7·7 | 10·0 | | | | | | | |
| Deduced Mean Temp. (from mean of Max. and Min.) | 39·6 | 38·2 | | | | | | | |
| Mean Temperature from Dry Bulb | 40·0 | 38·8 | | | | | | | |
| Adopted Mean Temperature | 39·8 | 38·5 | | | | | | | |
| Mean Temperature of Evaporation | 38·4 | 37·0 | | | | | | | |
| Mean Temperature of Dew Point..... | 36·6 | 35·1 | | | | | | | |
| Mean elastic force of Vapour.....inches | 0·217 | 0·206 | | | | | | | |
| Mean weight of Vapour in a cub. ft. of air, grains | 2·5 | 2·4 | | | | | | | |
| Mean additional weight required for saturation ,, | 0·3 | 0·4 | | | | | | | |
| Mean degree of Humidity (saturation 100)..... | 89 | 87 | | | | | | | |
| Mean weight of a cubic foot of air.....grains | 543·0 | 547·8 | | | | | | | |
| Mean amount of Cloud (0—10) | 9·0 | 7·6 | | | | | | | |
| Fall of Rain | inches 5·758 | 4·486 | | | | | | | |
| Greatest Rainfall in one day (7th)..... ,, | 1·047 | 0·847 | | | | | | | |
| No. of days on which ·005 in. or more Rain fell... | 20 | 19·4 | | | | | | | |
| No. of days in the month on which the prevailing Wind was | N | NE | E | SE | S | SW | W | NW | |
| | 1 | 3 | 7 | 0 | 6 | 10 | 3 | 1 | |
| Mean Velocity in miles per hour | 3·0 | 5·1 | 12·9 | 0 | 11·3 | 11·0 | 11·3 | 17·8 | |
| Total No. of miles for each Direction | 73 | 367 | 2160 | 0 | 1631 | 2636 | 810 | 428 | |
| Total No. of miles registered | 8105 | | | | | | | Mean.* | |
| | 7814·4 | | | | | | | | |
| Greatest hourly velocity (4th, 2 p.m. Dir. S. by E.) | 40 | | | | | | | 43·0 | |

* For the last 40 years.

DECEMBER, 1907.

DIFFERENCES.

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

| | | | | | |
|------------------------------|-----|-----|-----|-----|-------------|
| Mean barometric pressure | ... | ... | ... | ... | — 0·175 in. |
| Monthly range | „ | ... | ... | ... | + 0·243 „ |
| Mean of highest temperatures | ... | ... | ... | ... | + 0·2° |
| Mean of lowest | „ | ... | ... | ... | + 2·5° |
| Mean daily range | „ | ... | ... | ... | — 2·3° |
| Adopted mean temperature | ... | ... | ... | ... | + 1·3° |
| Total rainfall | ... | ... | ... | ... | + 1·272 in. |

Ground frost on 1st, 7th, 12th, 13th, 15th, 16th, 24th—31st.
Hoar frost on the 6th, 12th and 15th. Snow on 7th, and 27th—
31st. Hail on the 3rd—7th, on 25th and 27th. Heavy rain on
7th, 19th and 20th. Gales of wind on the 4th and 14th. Fog on
23rd and 24th. Lightning on 3rd and 4th. Solar halo on the 7th.

EXTREME READINGS FOR DECEMBER.

During 60 Years.

| | | | |
|---|------------------|------------------------|------------|
| Highest reading of Barometer | ..... | 1905 (12th)..... | 30·484 in. |
| Lowest | „ „ | 1886 (8th)..... | 27·350 „ |
| Highest temperature | ..... | 1876 (9th)..... | 58·1° |
| Lowest | „ | 1860 (24th)..... | 6·7° |
| Highest adopted mean temperature..... | 1857..... | ..... | 44·6° |
| Lowest | „ „ | 1878..... | 30·3° |
| Greatest fall of rain..... | 1880..... | ..... | 9·211 in. |
| Least | „ | 1890..... | 0·550 „ |
| Greatest fall of rain in one day..... | 1870 (19th)..... | ..... | 1·962 „ |
| Greatest No. of days on which ·005 in. or more rain fell | ..... | 1868..... | 28 |
| Least | „ „ „ | †1853..... | 8 |
| *Greatest hourly velocity of the wind ... | 1894 (22nd)..... | ..... | 72 mls. |
| *Greatest No. of miles registered | ..... | 1898..... | 11265 |
| *Least | „ „ „ | 1878..... | 4885 |

* Since 1867 only.

† And in other years.

Summary of Observations, 1907.

| Results of Observations taken during the Year. | Mean for the last 60 years. | |
|--|-----------------------------|--------|
| <i>Readings of Barometer in inches.</i> | | |
| Mean of the Year..... | 29·508 | 29·496 |
| Highest Monthly Mean (January) | 29·862 | 29·748 |
| Lowest ,, ,, (October) | 29·205 | 29·228 |
| Highest Reading (January 23rd) | 30·553 | 30·295 |
| Lowest ,, (December 13th) | 28·246 | 28·251 |
| Range | 2·307 | 2·044 |
| <i>Thermometer, Fahrenheit.</i> | | |
| Highest Monthly Mean Temperature (July)..... | 55·4 | 58·6 |
| Lowest ,, ,, ,, (Feb.) | 35·7 | 35·2 |
| Highest Reading of a Max. Therm. (July 17th)... | 77·2 | 81·7 |
| Lowest ,, Min. ,, (Jan. 25th) ... | 20·1 | 15·7 |
| Range of Thermometer Readings | 57·1 | 66·0 |
| Mean of all the Highest ,, | 52·1 | 54·7 |
| Mean of all the Lowest ,, | 41·0 | 40·7 |
| Mean Daily Range | 11·1 | 14·0 |
| Deduced Mean Temp. (from mean of Max. and Min.) | 45·5 | 46·8 |
| Mean Temperature from Dry Bulb | 46·9 | 46·9 |
| Adopted Mean Temperature of the Year | 46·2 | 46·8 |
| Mean Temperature of Evaporation | 44·1 | 44·5 |
| Mean Temperature of Dew Point..... | 41·7 | 42·1 |
| Mean elastic force of Vapour .....inches | 0·271 | 0·273 |
| Mean weight of Vapour in a cub. ft. of air...grns. | 3·1 | 3·3 |
| Mean additional weight required for saturation ,, | 0·6 | 0·7 |
| Mean degree of Humidity (saturation 100)..... | 85 | 83 |
| Mean weight of a cubic foot of air .....grns. | 540·2 | 539·2 |
| Mean amount of Cloud (0—10) | 7·7 | 7·3 |
| Total fall of Rain .....inches | 49·915 | 46·874 |
| Greatest Monthly Rainfall (June)..... ,, | 8·705 | 7·525 |
| Least ,, ,, (September) ... ,, | 1·160 | 1·189 |
| Greatest Rainfall in one day (August 7th) ,, | 1·410 | 1·622 |
| No. of days per Month on which ·005 inch or more Rain fell | 18·4 | 17·0 |

SUMMARY OF WIND, 1907.

| No. of days in the year on which the prevailing Wind was | N | NE | E | SE | S | SW | W | NW |
|--|-------|------|------|-----|-------|-------|---------|-----------------------------------|
| | 25 | 55 | 31 | 4 | 46 | 61 | 130 | 13 |
| Mean Velocity in miles per hour | 5·8 | 5·6 | 10·9 | 9·7 | 10·7 | 10·1 | 11·2 | 11·6 |
| Total No. of miles for each Direction | 3453 | 7445 | 8145 | 929 | 11821 | 14718 | 34939 | 3609 |
| | | | | | | | | Mean for the last 40 years. |
| Total No. of miles registered | 85059 | | | | | | 87317·0 | |
| Greatest Monthly Total (March) | 8611 | | | | | | 10134·8 | |
| Least ,, ,, (September) | 4530 | | | | | | 5132·1 | |
| Greatest hourly velocity (March 16th) | 50 | | | | | | 52·1 | |
| Prevailing Direction of Wind | W | | | | | | W | |

DIFFERENCES, 1907.

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

| | |
|-------------------------------------|-------------|
| Mean barometric pressure | + 0·012 in. |
| Yearly range ,, | + 0·263 ,, |
| Mean of highest temperatures | — 2·6° |
| Mean of lowest ,, | + 0·3° |
| Mean daily range | — 2·9° |
| Adopted mean temperature | — 0·6° |
| Total rainfall | + 3·041 in. |

ABSOLUTE EXTREMES
FOR THE LAST 60 YEARS.

Readings of Barometer, in inches.

| | | |
|------------------------------|---------------------|--------|
| Highest monthly mean..... | 1891 (Feb.) .. | 29·997 |
| Lowest " " | 1868 (Dec.) | 28·984 |
| Highest yearly " | 1896 | 29·584 |
| Lowest " " | 1872 | 29·319 |
| Greatest monthly range | 1884 (Jan.) | 2·409 |
| Least " " | 1852 (July) | 0·505 |
| Highest reading | 1896 (Jan. 9) | 30·597 |
| Lowest " | 1886 (Dec. 8) | 27·350 |
| Extreme range | | 3·247 |

Thermometer, Fahrenheit.

| | | |
|--------------------------------------|---------------------|------|
| Highest monthly mean temperature ... | 1901 (July) | 63·2 |
| Lowest " " " | 1855 (Feb.) | 28·6 |
| Highest yearly " " | 1868 | 49·1 |
| Lowest " " " | 1879 | 44·1 |
| Highest reading | 1901 (July 20)..... | 89·0 |
| Lowest " " " | 1881 (Jan. 15)..... | 4·6 |

Weight of Vapour in a cubic foot of air (grains).

| | | |
|-----------------------------|--------------------|-----|
| Greatest monthly mean | 1852 (July) | 5·1 |
| Least " " | †1855 (Feb.) | 1·4 |

† And on other dates.

ABSOLUTE EXTREMES
FOR THE LAST 60 YEARS—Continued.

Rainfall, in inches.

| | | |
|------------------------------------|----------------------|--------|
| Greatest Rainfall in one day | 1866 (Nov. 16) | 3.700 |
| Greatest " " month | 1870 (Oct.) | 13.437 |
| Least " " " | 1859 (May) | 0.249 |
| Greatest " " year | 1866 | 62.093 |
| Least " " " | 1887 | 31.250 |

Days on which .005 in. or more Rain fell:

| | | |
|---------------------------------|-------------------|-----|
| Greatest No. in one month | 1890 (Jan.) | 30 |
| Least " " | 1852 (Mar.) | 3 |
| Greatest " year | 1872 | 281 |
| Least " " | 1855 | 135 |

* *Wind.*

| | | |
|---|----------------------|--------|
| Greatest hourly velocity, in miles | 1894 (Dec. 22) | 72 |
| Greatest No. of miles registered in a month | 1888 (Nov.) | 12813 |
| Least " " " | 1888 (Sep.) | 3261 |
| Greatest Mean No. " " | March | 8665 |
| Least " " " | September | 6229 |
| Greatest No. " " year | 1868 | 102395 |
| Least " " " " | 1887 | 78951 |

DATES OF OCCASIONAL PHENOMENA.

| 1907. | Frost. | Hoar Frost. | Snow. | Hail. | Heavy Rain. |
|-----------|---|-------------|-----------------|------------------|---------------------|
| January | 2-4, 11, 18, 19, 22-31 | | 2, 3, 22-24, 26 | 2, 28, 29 | ... 1 ... |
| February | ... 1-14, 20-24, 27, 28 ... | | 4, 8, 12, 22 | ... 11 ... | ... 11, 16 ... |
| March | 1, 3-7, 9-12, 14, 21, 23-31 | | 8-11, 13 | ... 8, 13 ... | 9, 12, 15, 16, 19 |
| April | 1, 4, 5, 7-10, 15, 17-20, 22, 25-28, 30 | | 7, 27 | ... 2, 7, 27 ... | ... |
| May | ... 5, 16-18, 20-22, 29 ... | | ... | ... 2, 4 ... | ... 30 ... |
| June | ... | | ... | ... | 2, 4, 5, 11, 19, 24 |
| July | ... 1, 11 ... | | ... | ... | ... 4, 21 ... |
| August | ... | | ... | ... | 7, 8, 14, 15, 22 |
| September | ... | | ... | ... | ... 4 ... |
| October | ... 8, 16, 24, 25, 27, 28 ... | | ... | ... | ... 5 ... |
| November | 11, 12, 15, 16, 18-27, 29, 30 | 16, 25, 30 | 23, 25, 26 | 23, 24, 26, 27 | ... |
| December | 1-7, 12, 13, 15, 16, 24-31 | 6, 12, 15 | 7, 27-31 | 3-7, 25, 27 | ... 7, 19, 20 ... |

| 1907. | Gales of Wind. | Fog. | Thunder. | Lightning | Lunar Halo. | Solar Halo. | Aurora Borealis. |
|-----------|----------------|--------------------------|------------------|--------------|-------------|-------------|------------------|
| January | 28, 29 | 16, 19-21, 27 | 29 | ... | 25, 27 | ... | ... |
| February | 17, 19, 20 | ... 27, 28 ... | ... | ... 19 ... | ... | ... | ... |
| March | 17, 18 | ... 4 ... | ... | ... | ... | ... | ... |
| April | ... | ... | 2, 17 | ... | ... | ... | ... |
| May | ... | ... | 9, 12, 24 | ... 12 ... | ... | ... | ... |
| June | ... | ... | 5, 9, 10, 12, 29 | 9, 10 | ... | ... | ... |
| July | ... | ... | 4, 21 | 4, 21 | ... | ... | ... |
| August | ... | ... | ... | ... | ... | 23, 24 | ... |
| September | ... | 8, 13, 19, 20, 21 | 26 | ... | ... | 3, 4 | ... |
| October | ... | 5, 22, 27 | 1 | ... | ... | 6, 7, 9 | ... |
| November | ... 13 ... | 5, 9, 16, 20, 21, 25, 30 | ... | ... 12 ... | 12, 13, 20 | 21 | ... |
| December | 4, 14 | ... 23, 24 ... | ... | ... 3, 4 ... | ... | 7 | ... |

MONTHLY TOTALS FOR EACH HOUR OF RECORDED SUNSHINE.

| Local apparent time. | 4-5 | 5-6 | 6-7 | 7-8 | 8-9 | 9-10 | 10-11 | 11-12 | 12-1 | 1-2 | 2-3 | 3-4 | 4-5 | 5-6 | 6-7 | 7-8 | 8-9 |
|----------------------|-----|------|------|------|------|-------|-------|-------|-------|-------|-------|------|------|------|------|-----|-----|
| January | 0 | 0 | 0 | 0 | 1·7 | 4·8 | 6·6 | 8·5 | 6·5 | 3·5 | 2·7 | 1·2 | 0 | 0 | 0 | 0 | 0 |
| February | 0 | 0 | 0 | 1·7 | 5·5 | 6·4 | 8·5 | 12·0 | 12·7 | 12·3 | 11·2 | 7·1 | 0·4 | 0 | 0 | 0 | 0 |
| March | 0 | 0 | 0·7 | 6·0 | 14·8 | 16·3 | 20·4 | 20·4 | 19·6 | 17·6 | 19·0 | 17·6 | 13·0 | 3·2 | 0 | 0 | 0 |
| April | 0 | 0·1 | 2·8 | 8·8 | 12·4 | 13·3 | 11·4 | 12·4 | 10·6 | 11·0 | 9·3 | 9·0 | 7·2 | 4·9 | 1·1 | 0 | 0 |
| May | 0·5 | 2·7 | 6·5 | 9·0 | 10·8 | 9·2 | 10·5 | 10·9 | 10·8 | 9·2 | 9·1 | 7·1 | 6·8 | 5·5 | 1·2 | 0 | 0 |
| June | 0·9 | 4·2 | 4·8 | 7·4 | 7·4 | 7·6 | 11·2 | 10·7 | 9·0 | 9·4 | 9·1 | 8·2 | 7·4 | 6·3 | 4·1 | 1·3 | 0 |
| July | 0·3 | 3·6 | 8·7 | 8·1 | 10·3 | 11·4 | 13·7 | 15·4 | 16·6 | 16·9 | 17·2 | 16·2 | 14·6 | 11·7 | 9·6 | 1·4 | 0 |
| August | 0 | 0 | 2·7 | 8·6 | 9·5 | 10·6 | 13·3 | 12·1 | 12·1 | 12·0 | 11·6 | 12·6 | 10·4 | 7·4 | 1·4 | 1·0 | 0 |
| September | 0 | 0 | 0·9 | 6·7 | 9·2 | 10·6 | 13·8 | 15·4 | 14·0 | 14·9 | 13·4 | 11·6 | 6·4 | 1·2 | 0 | 0 | 0 |
| October | 0 | 0 | 0·1 | 1·8 | 7·7 | 11·2 | 10·9 | 10·7 | 11·8 | 10·3 | 7·4 | 4·7 | 1·8 | 0 | 0 | 0 | 0 |
| November | 0 | 0 | 0 | 0 | 2·5 | 6·3 | 6·9 | 9·6 | 9·6 | 7·9 | 5·9 | 2·0 | 0 | 0 | 0 | 0 | 0 |
| December | 0 | 0 | 0 | 0 | 0·1 | 0·4 | 2·7 | 6·0 | 5·2 | 2·4 | 0·7 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sums | 1·7 | 10·6 | 27·2 | 58·1 | 91·9 | 108·1 | 129·9 | 144·1 | 138·5 | 127·4 | 116·6 | 97·3 | 68·0 | 40·2 | 17·4 | 3·7 | 0 |

TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY.

| 1907. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|---------------|------|-----|-----|-----|-----|------|-----|-----|-----|------|-----|------|-----|-----|-----|------|------|
| January ... | 0 | 0 | 0 | 3.1 | 0 | 0.1 | 0 | 0 | 0 | 0 | 1.8 | 0 | 2.2 | 0 | 0.5 | 0 | 0 |
| February ... | 1.3 | 1.3 | 0 | 0 | 5.7 | 0.8 | 4.7 | 0.4 | 3.6 | 1.3 | 5.4 | 0 | 7.8 | 0 | 0.9 | 4.9 | 3.6 |
| March ... | 0 | 2.2 | 5.6 | 2.8 | 1.4 | 7.8 | 0.3 | 2.7 | 0.3 | 6.9 | 7.0 | 0 | 3.9 | 6.7 | 4.4 | 0 | 6.3 |
| April ... | 10.4 | 8.5 | 0 | 3.8 | 4.3 | 5.6 | 1.2 | 4.2 | 4.2 | 3.0 | 1.7 | 0.8 | 0.2 | 1.4 | 8.0 | 2.4 | 6.6 |
| May ... | 6.7 | 5.1 | 3.5 | 0.3 | 7.8 | 11.1 | 0 | 8.0 | 4.7 | 0 | 0.3 | 3.4 | 0.5 | 0 | 3.7 | 3.5 | 8.4 |
| June ... | 0 | 0.5 | 3.0 | 2.3 | 1.6 | 0 | 0.6 | 0.2 | 7.6 | 3.9 | 3.7 | 4.7 | 2.5 | 0.4 | 0.5 | 10.1 | 13.2 |
| July ... | 7.4 | 9.2 | 0.1 | 3.9 | 6.3 | 1.4 | 6.2 | 0.3 | 3.8 | 4.1 | 8.2 | 12.1 | 0 | 0.2 | 3.3 | 11.6 | 14.1 |
| August ... | 3.5 | 2.5 | 1.3 | 1.9 | 4.0 | 8.3 | 1.6 | 6.2 | 5.4 | 5.9 | 4.9 | 3.0 | 1.0 | 0 | 2.5 | 2.9 | 2.2 |
| September ... | 5.3 | 1.2 | 5.4 | 4.0 | 7.3 | 5.1 | 4.3 | 5.4 | 3.4 | 10.2 | 8.8 | 4.4 | 1.6 | 3.8 | 4.3 | 0.7 | 1.9 |
| October ... | 1.8 | 5.2 | 6.8 | 8.6 | 0 | 0.5 | 9.1 | 4.6 | 3.5 | 2.8 | 3.9 | 0 | 3.3 | 2.2 | 0.2 | 4.3 | 0 |
| November ... | 6.8 | 0.3 | 1.5 | 0 | 0.2 | 3.5 | 1.3 | 0 | 0.5 | 3.2 | 0 | 4.8 | 4.6 | 0 | 7.1 | 0 | 0 |
| December ... | 0 | 0 | 1.5 | 0 | 1.4 | 2.6 | 2.6 | 0 | 0.4 | 0 | 0 | 0 | 0 | 0.4 | 2.5 | 0 | 0 |

TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY—(continued).

| 1907. | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | MONTHLY. | |
|---------------|------|------|-----|-----|-----|------|-----|-----|------|-----|-----|-----|------|------|----------|-------------|
| | | | | | | | | | | | | | | | Total. | Percentage. |
| January ... | 2.1 | 0 | 0 | 0.6 | 0.8 | 4.1 | 0.1 | 0 | 5.1 | 0 | 0 | 2.0 | 7.2 | 5.8 | 35.5 | 14.3 |
| February .. | 0 | 0 | 0.8 | 8.2 | 8.3 | 8.1 | 0 | 0.7 | 0 | 5.3 | 4.7 | — | — | — | 77.8 | 28.6 |
| March ... | 5.4 | 0.6 | 7.8 | 9.1 | 7.3 | 9.6 | 2.3 | 8.7 | 10.2 | 8.7 | 9.2 | 9.7 | 10.7 | 11.0 | 168.6 | 46.1 |
| April... .. | 7.3 | 2.7 | 1.2 | 0.3 | 6.0 | 0 | 7.4 | 7.8 | 3.9 | 2.2 | 2.7 | 5.8 | 0.7 | — | 114.3 | 27.3 |
| May | 6.0 | 0.6 | 7.0 | 3.3 | 8.0 | 0 | 2.3 | 0.3 | 0.8 | 4.7 | 0 | 9.8 | 0 | 0 | 109.8 | 22.3 |
| June | 0.2 | 2.7 | 0 | 0.7 | 9.4 | 7.8 | 0 | 5.7 | 0.2 | 9.2 | 7.9 | 4.4 | 6.0 | 0 | 109.0 | 21.5 |
| July | 12.6 | 11.1 | 5.0 | 4.2 | 3.7 | 10.4 | 8.1 | 0 | 1.4 | 7.0 | 1.9 | 3.8 | 6.8 | 7.5 | 175.7 | 34.5 |
| August ... | 8.9 | 5.0 | 6.5 | 1.3 | 0 | 6.8 | 4.0 | 0 | 2.9 | 9.0 | 9.2 | 0.1 | 10.8 | 3.7 | 125.3 | 27.4 |
| September ... | 7.3 | 4.5 | 4.4 | 1.7 | 4.1 | 0 | 5.7 | 1.4 | 0.2 | 1.7 | 9.3 | 0.7 | 0 | — | 118.1 | 31.2 |
| October ... | 0 | 3.0 | 1.0 | 5.8 | 2.2 | 1.2 | 5.6 | 0.3 | 0 | 0.7 | 1.7 | 0.1 | 0 | 0 | 78.4 | 24.0 |
| November ... | 4.5 | 0 | 0 | 0.1 | 0 | 0.1 | 0.7 | 0 | 0 | 1.3 | 5.7 | 0.5 | 4.0 | — | 50.7 | 19.8 |
| December ... | 1.2 | 0 | 0 | 0 | 0 | 0 | 1.2 | 1.4 | 0.8 | 0.3 | 1.1 | 0 | 0.1 | 0 | 17.5 | 7.6 |

SUMMARY OF SUNSHINE.

| 1907. | BRIGHT SUNSHINE RECORDED. | | | | | |
|---------------|---------------------------|--------|----------------------------------|-----------------------------|--------|----------------------------------|
| | Number of | | Percentage of Possible Sunshine. | Mean for the last 27 years. | | |
| | Days. | Hours. | | Number of | | Percentage of Possible Sunshine. |
| | | | Days. | Hours. | | |
| January ... | 14 | 35·5 | 14·3 | 14·0 | 34·2 | 13·8 |
| February ... | 20 | 77·8 | 28·6 | 17·6 | 59·9 | 21·9 |
| March ... | 28 | 168·6 | 46·1 | 24·2 | 109·5 | 29·9 |
| April ... | 28 | 114·3 | 27·3 | 26·2 | 150·5 | 35·9 |
| May... .. | 24 | 109·8 | 22·3 | 27·4 | 187·3 | 38·0 |
| June ... | 26 | 109·0 | 21·5 | 27·7 | 192·9 | 38·0 |
| July ... | 29 | 175·7 | 34·5 | 28·4 | 180·4 | 35·5 |
| August ... | 28 | 125·3 | 27·4 | 27·5 | 151·8 | 33·2 |
| September ... | 28 | 118·1 | 31·2 | 25·7 | 128·1 | 33·8 |
| October ... | 24 | 78·4 | 24·0 | 22·9 | 86·8 | 26·6 |
| November ... | 19 | 50·7 | 19·8 | 17·0 | 44·5 | 17·4 |
| December ... | 14 | 17·5 | 7·6 | 12·9 | 25·7 | 11·1 |
| Year ... | 282 | 1180·7 | 26·4 | 271·6 | 1351·6 | 30·3 |

SUMMARY OF SUNSHINE—Continued.
EXTREMES FOR THE LAST 27 YEARS.

| MONTH. | Number of Days | | Number of Hours | | | | Percentage of Possible Sunshine. | |
|--------|---------------------------------|----------|-----------------|-------------|-----------|-----------|----------------------------------|-------|
| | on which Sunshine was recorded. | | | | | | Greatest | Least |
| | Greatest | Least | Greatest | Least | Greatest | Least | | |
| | No. Year | No. Year | No. Year | No. Year | No. Year | % Year | % Year | |
| Jan. | 21 1881 | 8 1898 | 64·2 1881 | 14·9 1885 | 25·9 1881 | 6·0 1885 | | |
| Feb. | 24 1895 | 11 1882 | 89·3 1887 | 29·6 1882 | 32·8 1887 | 10·9 1882 | | |
| Mar. | 28 *1894 | 17 1904 | 168·6 1907 | 67·0 1895 | 46·1 1907 | 18·3 1895 | | |
| Apr. | 29 *1900 | 22 1905 | 223·7 1893 | 95·7 1889 | 53·4 1893 | 22·8 1889 | | |
| May | 30 *1881 | 22 1886 | 266·6 1881 | 79·7 1906 | 54·1 1881 | 16·2 1906 | | |
| June | 30 *1896 | 24 *1888 | 272·5 1887 | 109·0 1907 | 53·6 1887 | 21·5 1907 | | |
| July | 31 1882 | 25 1888 | 247·2 1887 | 98·0 1888 | 48·6 1887 | 19·3 1888 | | |
| Aug. | 31 *1886 | 23 1894 | 235·2 1899 | 88·4 1891 | 51·5 1899 | 19·3 1891 | | |
| Sept. | 29 *1895 | 21 1897 | 175·6 1906 | 62·9 1896 | 46·3 1906 | 16·6 1896 | | |
| Oct. | 28 1891 | 17 1889 | 134·9 1899 | 50·0 1889 | 41·4 1899 | 15·3 1889 | | |
| Nov. | 23 1883 | 9 1897 | 65·2 1903 | 18·5 1891 | 25·5 1903 | 7·2 1891 | | |
| Dec. | 18 *1886 | 6 1882 | 60·1 1886 | 13·8 1903 | 26·0 1886 | 6·0 1903 | | |
| Year | 300 1905 | 251 1903 | 1613·7 1887 | 1132·1 1888 | 36·1 1887 | 25·3 1888 | | |

* And in other years.

OBSERVATIONS OF UPPER CLOUDS (CIRRUS.)

| 1907. | G. M. T. | CLOUD. | | WIND. | | Direction of Lower Clouds. |
|---------|------------|-------------|-----------------|-------------|---------------|----------------------------|
| | | Direction.* | Velocity (0-6.) | Direction.* | Force (0-12.) | |
| Jan. 6 | 9-0 a.m. | W | 5 | W | 4 | W |
| „ 31 | 9-0 p.m. | N | 2 | Calm | 0 | — |
| Feb. 7 | 9-0 a.m. | N | 1 | Calm | 0 | NW |
| „ 22 | 9-0 a.m. | NW | 3 | NW by N | 2 | NW |
| „ 23 | 9-0 a.m. | N | 1 | N | 1 | NE |
| Mar. 6 | 9-0 a.m. | S | 1 | Calm | 0 | W |
| „ 10 | 9-0 a.m. | W | 6 | W | 5 | W |
| „ 20 | 9-0 p.m. | SW | 2 | SW by W | 1 | SW |
| Apr. 18 | 9-0 a.m. | N | 1 | N | 1 | N |
| „ 22 | 9-0 a.m. | W | 1 | W by S | 3 | SW |
| May 8 | 9-0 a.m. | S | 3 | SSE | 5 | S |
| „ 12 | 9-0 a.m. | N | 2 | NE by N | 1 | S |
| „ 13 | 9-0 a.m. | NW | 2 | W | 1 | W |
| „ 29 | 9-0 a.m. | E | 4 | E | 4 | SE |
| June 25 | 9-0 a.m. | SW | 4 | W | 4 | W |
| July 23 | 0-50 p.m. | E | 2 | N by E | 1 | E |
| „ 23 | 2-30 p.m. | E | 1 | NNE | 1 | — |
| „ 24 | 0-20 p.m. | SW | 1 | NE by N | 1 | — |
| „ 27 | 7-15 p.m. | W | 3 | W by S | 1 | W |
| Aug. 1 | 5-40 p.m. | N | 1 | W by S | 3 | W |
| „ 6 | 4-20 p.m. | W | 2 | WSW | 4 | WSW |
| „ 6 | 6-15 p.m. | W by S | 2 | W by S | 3 | WSW |
| „ 8 | Noon | W by N | 2 | W by S | 5 | SW |
| „ 8 | 1-0 p.m. | WSW | 2 | W by S | 5 | WSW |
| „ 9 | 7-40 p.m. | SW by S | 2 | Calm | 0 | SW by W |
| „ 18 | 8-0 a.m. | W | 3 | W by S | 3 | W |
| „ 18 | 11-35 a.m. | W by S | 3 | W by S | 3 | W by S |
| „ 18 | 1-20 p.m. | WSW | 3 | W by S | 3 | W by S |

* Whence coming.

OBSERVATIONS OF UPPER CLOUDS (CIRRUS)—Continued.

| 1907. | G. M. T. | CLOUD. | | WIND. | | Direction of Lower Clouds. |
|---------|------------|-------------|-----------------|-------------|---------------|----------------------------|
| | | Direction.* | Velocity (0-6.) | Direction.* | Force (0-12.) | |
| Aug. 19 | 8-15 a.m. | W by S | 1 | W | 4 | W by N |
| " 19 | 4-30 p.m. | WNW | 2 | W | 4 | WNW |
| " 20 | 8-0 a.m. | NW by N | 1 | WNW | 3 | NW by W |
| " 20 | 8-15 p.m. | N by E | 2 | W by N | 1 | N by E |
| " 21 | 7-30 a.m. | N by E | 1 | W by S | 2 | W |
| " 23 | 8-15 a.m. | WNW | 3 | NW by W | 4 | WNW |
| " 23 | 1-40 p.m. | WNW | 1 | WNW | 3 | WNW |
| " 23 | 3-0 p.m. | NW | 3 | WNW | 3 | W |
| " 24 | 4-0 p.m. | NW by N | 2 | W by S | 3 | SW by W |
| " 26 | 5-20 p.m. | SW by S | 3 | W | 1 | SW by W |
| " 27 | 7-20 a.m. | W by S | 3 | Calm | 0 | W by S |
| " 28 | 2-0 p.m. | SW by W | 1 | W by S | 4 | SW |
| " 31 | 5-0 p.m. | W by S | 2 | W | 3 | W by N |
| Sept. 3 | 8-15 a.m. | WSW | 3 | N by W | 1 | NW by W |
| " 3 | 10-0 a.m. | W | 3 | NE by N | 1 | NW |
| " 3 | 10-30 a.m. | NW | 3 | ENE | 1 | NW |
| " 4 | 9-0 a.m. | NW | 2 | Calm | 0 | W |
| " 5 | 9-0 a.m. | W by N | 3 | WSW | 4 | SW |
| " 5 | 10-30 a.m. | WNW | 3 | WSW | 5 | SW by W |
| " 5 | 3-30 p.m. | W | 3 | SW | 4 | SW by W |
| " 6 | 9-15 a.m. | WSW | 3 | SW by S | 2 | SW by W |
| " 8 | 10-0 a.m. | WNW | 2 | Calm | 0 | NE |
| " 12 | 5-0 p.m. | S by W | 1 | W by S | 1 | S |
| " 12 | 6-30 p.m. | SW | 1 | Calm | 0 | S |
| " 14 | 8-25 a.m. | WNW | 2 | NW | 2 | WSW |
| " 15 | 8-30 a.m. | NW by W | 3 | W | 1 | NW by W |
| " 17 | 8-0 a.m. | NW by N | 3 | W | 2 | NW by W |
| " 17 | 10-0 a.m. | W by S | 3 | W by N | 2 | W |
| " 24 | 10-0 a.m. | ENE | 2 | Calm | 0 | N |
| " 27 | 9-0 a.m. | W by S | 2 | NNE | 1 | SW |
| " 27 | Noon | S | 2 | NNE | 2 | W |
| " 27 | 2-0 p.m. | WSW | 2 | NE by N | 1 | SW |
| " 28 | 7-0 a.m. | W | 2 | NNE | 2 | W |
| " 28 | 8-0 a.m. | WSW | 2 | NE by N | 2 | W |

* Whence coming.

OBSERVATIONS OF UPPER CLOUDS
(CIRRUS)—*Continued.*

| 1907. | G. M. T. | CLOUD. | | WIND. | | Direction of Lower Clouds. |
|--------|------------|-------------|-----------------|-------------|---------------|----------------------------|
| | | Direction.* | Velocity (0-6.) | Direction.* | Force (0-12). | |
| Oct. 2 | 2-45 p.m. | NW by N | 2 | SSW | 3 | SW by S |
| „ 2 | 3-20 p.m. | W | 2 | SSW | 4 | SSW |
| „ 2 | 5-0 p.m. | WSW | 1 | SW by S | 3 | SW |
| „ 3 | 2-0 p.m. | NNW | 1 | SE | 2 | SE by S |
| „ 7 | 9-0 a.m. | NW by N | 2 | NW | 3 | NW |
| „ 7 | 10-0 a.m. | NW by W | 1 | NW by W | 3 | NW |
| „ 8 | 8-0 a.m. | NNW | 1 | NNE | 1 | NW |
| „ 8 | 9-0 a.m. | NW | 1 | NNE | 1 | NW |
| „ 10 | 9-10 a.m. | SE by E | 2 | NE | 1 | E |
| „ 11 | 10-45 a.m. | S by W | 3 | S | 4 | S |
| „ 13 | 9-45 a.m. | SSW | 6 | WSW | 1 | W by S |
| „ 16 | 10-0 a.m. | N | 3 | NE | 1 | N by E |
| „ 16 | Noon | NNE | 3 | NE | 1 | NE |
| „ 16 | 2-0 p.m. | NE | 3 | NE by N | 1 | N |
| „ 24 | 8-15 a.m. | WNW | 2 | Calm | 0 | NE |
| „ 29 | 10-20 a.m. | E | 3 | ENE | 2 | NE |
| Nov. 2 | 11-0 a.m. | E by S | 4 | ESE | 4 | E |
| „ 5 | 4-30 p.m. | SE | 2 | Calm | 0 | S |
| „ 6 | 9-0 a.m. | E by S | 3 | NE | 1 | ENE |
| „ 10 | 12-15 a.m. | SW by S | 2 | Calm | 0 | SW |
| „ 10 | 1-0 p.m. | N | 4 | WNW | 1 | WNW |
| „ 18 | 9-0 a.m. | NW | 4 | N by E | 1 | W |
| „ 18 | 10-0 a.m. | WNW | 4 | Calm | 0 | — |
| „ 24 | 4-0 p.m. | W by N | 6 | W | 1 | W |
| „ 30 | 9-0 a.m. | E | 6 | NE by N | 1 | — |
| Dec. 3 | 8-45 a.m. | E by S | 4 | SW by W | 1 | W |
| „ 12 | 10-30 a.m. | S by W | 3 | NE by N | 1 | S by W |
| „ 14 | 0-55 p.m. | N | 2 | NNW | 2 | — |
| „ 15 | 10-0 a.m. | NNW | 4 | Calm | 0 | — |
| „ 18 | 1-30 p.m. | W | 6 | SW by W | 1 | — |
| „ 18 | 2-30 p.m. | W | 4 | Calm | 0 | — |

* Whence coming.

CORRECTED TABLE OF RAINFALL FOR 30 YEARS.

| Year. | Jan. | Feb. | March. | April. | May. | June. | July. | Aug. | Sept. | Oct. | Nov. | Dec. | Yearly fall. |
|----------|--------------|-------|--------|--------|--------------|--------------|--------------|--------------|--------------|-------|-------|--------------|---------------|
| 1878 ... | 5·124 | 2·123 | 2·694 | 1·581 | 4·663 | 3·375 | 1·198 | 7·052 | 6·329 | 5·451 | 3·797 | 2·041 | 45·428 |
| 1879 ... | 1·532 | 2·698 | 2·511 | 1·559 | 2·381 | 4·794 | 6·789 | 7·706 | 3·401 | 4·145 | 1·316 | 3·563 | 42·395 |
| 1880 ... | 0·881 | 3·756 | 3·174 | 2·015 | 2·844 | 4·787 | 7·005 | 2·244 | 3·969 | 3·007 | 7·368 | 9·211 | 50·261 |
| 1881 ... | 0·472 | 6·320 | 4·968 | 2·010 | 5·587 | 2·738 | 5·822 | 6·215 | 2·164 | 3·368 | 5·226 | 4·773 | 49·663 |
| 1882 ... | 4·054 | 3·371 | 5·413 | 5·657 | 2·763 | 6·066 | 7·886 | 5·332 | 3·116 | 4·689 | 8·127 | 3·751 | 60·225 |
| 1883 ... | 5·534 | 2·968 | 1·029 | 2·029 | 1·053 | 4·314 | 3·026 | 3·459 | 6·665 | 5·757 | 5·262 | 4·903 | 45·999 |
| 1884 ... | 7·452 | 3·865 | 2·726 | 0·949 | 2·253 | 1·123 | 5·197 | 2·849 | 3·676 | 4·069 | 1·694 | 6·312 | 42·165 |
| 1885 ... | 3·437 | 3·044 | 3·732 | 1·744 | 2·097 | 3·936 | 2·363 | 2·604 | 5·642 | 5·723 | 3·825 | 2·697 | 40·844 |
| 1886 ... | 7·254 | 1·066 | 3·670 | 3·625 | 6·178 | 2·962 | 5·047 | 2·347 | 4·969 | 5·155 | 3·875 | 6·565 | 52·713 |
| 1887 ... | 3·200 | 1·839 | 3·008 | 1·844 | 2·794 | 0·525 | 2·311 | 2·255 | 5·755 | 2·121 | 2·474 | 3·124 | 31·250 |
| 1888 ... | 2·537 | 1·447 | 3·601 | 2·303 | 0·917 | 2·377 | 8·475 | 6·112 | 2·659 | 2·487 | 5·786 | 2·935 | 41·636 |
| 1889 ... | 2·588 | 3·320 | 4·066 | 2·075 | 2·895 | 2·081 | 3·032 | 6·837 | 5·118 | 3·389 | 2·563 | 4·548 | 42·512 |
| 1890 ... | 5·910 | 0·878 | 4·355 | 1·539 | 2·557 | 4·474 | 4·217 | 6·990 | 5·182 | 5·215 | 8·230 | 0·550 | 50·097 |
| 1891 ... | 3·137 | 0·614 | 1·926 | 2·116 | 3·097 | 1·479 | 3·143 | 9·869 | 5·003 | 3·884 | 4·510 | 8·686 | 47·464 |
| 1892 ... | 4·175 | 3·474 | 1·044 | 2·223 | 5·689 | 4·401 | 1·856 | 7·222 | 5·369 | 5·444 | 3·562 | 3·894 | 48·353 |
| 1893 ... | 1·793 | 5·762 | 1·699 | 0·811 | 2·448 | 2·382 | 5·026 | 6·090 | 7·206 | 7·858 | 4·575 | 4·903 | 50·553 |
| 1894 ... | 4·932 | 6·783 | 3·902 | 1·925 | 3·158 | 3·790 | 4·329 | 8·277 | 0·801 | 4·217 | 3·546 | 5·114 | 50·774 |
| 1895 ... | 2·800 | 0·553 | 4·365 | 2·648 | 0·500 | 3·423 | 5·319 | 5·199 | 2·044 | 5·767 | 3·748 | 6·005 | 42·371 |

CORRECTED TABLE OF RAINFALL FOR 30 YEARS—*Continued.*

| Year. | Jan. | Feb. | March. | April. | May. | June. | July. | Aug. | Sept. | Oct. | Nov. | Dec. | Yearly fall. |
|--------------------------------------|-------|-------|--------------|--------|-------|--------------|-------|-------|-------|--------|-------|-------|--------------|
| 1896 ... | 3·343 | 2·691 | 7·079 | 2·943 | 0·760 | 3·613 | 2·590 | 3·300 | 7·092 | 4·158 | 1·536 | 5·388 | 44·493 |
| 1897 ... | 1·265 | 4·170 | 5·393 | 3·045 | 3·524 | 4·832 | 2·743 | 7·685 | 5·733 | 2·698 | 5·835 | 4·699 | 51·622 |
| 1898 .. | 6·360 | 4·673 | 3·179 | 2·170 | 3·595 | 2·795 | 1·178 | 7·132 | 1·747 | 4·140 | 5·095 | 6·041 | 48·105 |
| 1899 ... | 7·209 | 2·163 | 3·842 | 4·287 | 3·437 | 1·780 | 2·983 | 2·360 | 9·139 | 3·071 | 3·275 | 4·111 | 47·657 |
| 1900 ... | 6·067 | 3·422 | 0·661 | 3·549 | 1·767 | 2·776 | 3·146 | 6·130 | 3·024 | 7·750 | 4·345 | 5·573 | 48·210 |
| 1901 ... | 2·896 | 2·136 | 3·495 | 2·538 | 0·818 | 2·087 | 1·864 | 3·327 | 1·313 | 4·597 | 8·185 | 5·724 | 38·980 |
| 1902 ... | 4·853 | 1·410 | 3·733 | 2·483 | 3·086 | 1·255 | 3·597 | 3·840 | 1·245 | 5·131 | 2·062 | 4·056 | 36·751 |
| 1903 ... | 5·262 | 4·609 | 4·994 | 2·902 | 3·309 | 2·363 | 4·680 | 6·410 | 6·020 | 10·832 | 4·589 | 2·970 | 58·940 |
| 1904 ... | 3·948 | 3·978 | 2·740 | 3·873 | 2·995 | 1·398 | 2·143 | 5·253 | 1·280 | 3·725 | 5·128 | 3·173 | 39·634 |
| 1905 ... | 2·938 | 2·680 | 3·480 | 3·690 | 0·650 | 3·095 | 3·560 | 4·095 | 4·385 | 4·715 | 4·230 | 1·320 | 38·838 |
| 1906 ... | 6·070 | 3·555 | 4·243 | 2·050 | 4·810 | 1·928 | 2·765 | 4·665 | 1·505 | 6·966 | 4·930 | 6·180 | 49·667 |
| 1907 ... | 2·995 | 3·515 | 5·635 | 1·795 | 3·633 | 8·705 | 3·303 | 6·210 | 1·160 | 3·864 | 3·342 | 5·758 | 49·915 |
| Means 1878-1907 | 4·001 | 3·096 | 3·545 | 2·466 | 2·875 | 3·188 | 3·886 | 5·302 | 4·090 | 4·780 | 4·401 | 4·619 | 46·250 |
| Means for the period 1848-1877 | 4·268 | 3·810 | 3·160 | 2·423 | 2·410 | 3·734 | 4·075 | 4·858 | 4·646 | 5·406 | 4·354 | 4·352 | 47·498 |
| 60 years' means | 4·135 | 3·453 | 3·353 | 2·444 | 2·643 | 3·461 | 3·981 | 5·080 | 4·368 | 5·093 | 4·378 | 4·486 | 46·874 |

Large type, greatest and least readings in 60 years.

OBSERVATIONS OF EARTH-MAGNETISM, 1907.

ABSOLUTE measures of Horizontal Magnetic Force have been made once each month, by the method of Vibration and Deflection.

In these observations the same Magnet has been employed from the beginning of the series in March, 1863. The weight of the Magnet with its stirrup is 825 grains, and its length 3.94 inches nearly. Its moment of inertia, measured by the method of vibrations, with and without a known increase of the moment, is 5.27303 to the English foot—second—grain units, at the temperature 35° Fahr., and its rate of increase is 0.00073 for increase of 10°.

The temperature corrections have been obtained from the formula $q(t^\circ - 32^\circ) + q'(t^\circ - 32^\circ)^2$ 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 0.00000436.

The induction co-efficient μ 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 1.5^s 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 $6\cdot7$ of arc.

In the calculations of the ratio $\frac{m}{X}$, the third and subsequent terms of the series $1 + \frac{P}{r^2} + \frac{Q}{r^4} + \text{\&c.}$, have always been omitted.

The value of the constant P was found to be $-0\cdot00215$.

The Vertical and Total Forces are deduced from the measures of the Horizontal Force, and the Angle of Inclination or Dip.

All the computations are in English foot—second—grain units ; but in the final table the results are given only in C. G. S. units.

The Dip, or angle between the direction of total force, and that of its horizontal component, has been measured with Dover's Circle, No. 159, once each month by two needles, always when possible on the days of vibration and deflection observations.

The Declination has been observed at the beginning of each week, usually on Mondays at 4 p.m., and is quoted as the angle between the horizontal direction of force and the Astronomical Meridian, measured from the North Point.

The Differential Instruments, or Photo-Magnetographs, are of the same pattern as those at the Kew Observatory, except that the radial distances between the centres of the magnets and the surfaces of the respective cylinders are shorter, and the clock is not provided with an automatic light cut-off, for the time scale. The "cut-offs" are made by hand at the hours 2, 4, and 22 of the astronomical day, to furnish two time marks at each end of the day's curves, the changes being made between 11-30 and noon, civil time.

The scale value of the Bifilar horizontal force torsion balance, has remained very constant at $0\cdot00051$ C. G. S. for one centimetre, during the last seventeen years.

The scale value of the Unifilar Declination Magnet is $11\cdot28$ arc per centimetre.

OBSERVATIONS OF DECLINATION AND DIP.

| 1907. | 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 | 17 44·9 | } 17 44·8 | | | |
| " | 14 " " | " 45·7 | | 2 68 45·0 | 21 10 0 | |
| " | 21 " " | " 43·6 | | 1 68 47·0 | 22 10 0 | |
| " | 28 " " | " 45·2 | | | | |
| Feb. | 4 16 0 | 17 44·5 | } 17 44·6 | | | |
| " | 11 " " | " 45·7 | | 1 68 46·2 | 16 11 30 | |
| " | 18 " " | " 42·3 | | 2 68 47·8 | " 12 0 | |
| " | 25 " " | " 46·1 | | | | |
| Mar. | 4 16 0 | 17 46·8 | } 17 45·3 | | | |
| " | 11 " " | " 43·5 | | 2 68 47·0 | 19 10 30 | |
| " | 18 " " | " 44·9 | | 1 68 47·0 | " 11 0 | |
| " | 25 " " | " 46·1 | | | | |
| April | 1 16 0 | 17 46·8 | } 17 45·8 | | | |
| " | 9 " " | " 47·8 | | 1 68 48·0 | 16 10 30 | |
| " | 15 " " | " 46·4 | | 2 68 49·2 | " 11 30 | |
| " | 22 17 30 | " 42·4 | | | | |
| May | 6 17 20 | 17 43·2 | } 17 46·0 | | | |
| " | 13 16 0 | " 46·6 | | 1 68 47·1 | 16 11 30 | |
| " | 20 " " | " 48·1 | | 2 68 46·5 | " 12 0 | |
| " | 27 " " | " 46·1 | | | | |
| June | 3 16 0 | 17 45·8 | } 17 45·5 | | | |
| " | 10 " " | " 44·4 | | 2 68 45·6 | 19 11 30 | |
| " | 17 " " | " 45·4 | | 1 68 46·8 | 20 10 0 | |
| " | 25 " " | " 46·3 | | | | |

**OBSERVATIONS OF DECLINATION
AND DIP—Continued.**

| 1907. | 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. |
| July | 1 16 0 | 17 47.1 | } 17 45.3 | | | |
| " | 9 " " | " 44.1 | | 1 68 42.3 | 16 10 45 | |
| " | 17 " " | " 45.1 | | 2 68 43.4 | " 11 15 | |
| " | 25 " " | " 44.9 | | | | |
| Aug. | 2 16 0 | 17 43.5 | } 17 43.8 | | | |
| " | 11 " " | " 43.2 | | 1 68 44.6 | 19 11 30 | |
| " | 19 " " | " 43.9 | | 2 68 45.1 | " 12 0 | |
| " | 26 " " | " 44.4 | | | | |
| Sept. | 3 16 0 | 17 43.6 | } 17 43.2 | | | |
| " | 11 " " | " 45.2 | | 1 68 49.3 | 18 10 0 | |
| " | 18 " " | " 41.2 | | 2 68 47.5 | " 10 30 | |
| " | 26 " " | " 42.6 | | | | |
| Oct. | 3 16 0 | 17 40.2 | } 17 41.1 | | | |
| " | 11 " " | " 41.6 | | 1 68 47.4 | 19 10 15 | |
| " | 19 " " | " 41.8 | | 2 68 47.4 | " 11 15 | |
| " | 28 " " | " 40.7 | | | | |
| Nov. | 4 16 0 | 17 43.9 | } 17 41.0 | | | |
| " | 11 17 " | " 40.0 | | 1 68 47.8 | 18 9 45 | |
| " | 18 16 0 | " 40.0 | | 2 68 47.5 | " 10 15 | |
| " | 25 " " | " 40.0 | | | | |
| Dec. | 2 16 0 | 17 39.9 | } 17 39.6 | | | |
| " | 9 " " | " 39.2 | | 1 68 44.5 | 17 11 30 | |
| " | 17 " " | " 40.2 | | 2 68 44.3 | " 12 0 | |
| " | 24 " " | " 39.2 | | | | |
| Yearly Mean | f | | 17 43.8 | | 68 46.4 | |

**Observations of Vibrations and Deflections for
Absolute Measure of Magnetic Force.**

| 1907. | 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. | ° | S. | D. | H. | M. | ° | ' | "/ | C.G.S. UNITS. |
| Jan. | 15 | 9 | 50 | 49 | 6·0588 | 15 | { 11 0 11 0 | 50 50 | 11 26·4 5 10·0 | | | 0·017315 |
| Feb. | 16 | 9 | 40 | 42 | 6·0606 | 16 | { 10 30 10 30 | 49 49 | 11 27·5 5 11·5 | | | 0·017307 |
| Mar. | 18 | 9 | 50 | 49 | 6·0650 | 18 | { 11 0 11 30 | 50 50 | 11 24·5 5 10·3 | | | 0·017271 |
| April | 15 | 9 | 45 | 45 | 6·0600 | 15 | { 11 20 11 50 | 50 55 | 11 25·7 5 10·8 | | | 0·017289 |
| May | 16 | 9 | 30 | 56 | 6·0603 | { 16 10 0 17 10 0 | 55 55 | 11 24·2 5 10·3 | | | | 0·017277 |
| June | 17 | 10 | 20 | 62 | 6·0614 | 17 | { 11 30 11 45 | 60 60 | 11 23·7 5 9·8 | | | 0·017305 |
| July | 15 | 9 | 45 | 70 | 6·0670 | 15 | { 11 10 11 20 | 67 69 | 11 22·6 5 10·0 | | | 0·017295 |
| Aug. | 19 | 10 | 0 | 59 | 6·0617 | 19 | { 10 50 11 0 | 56 58 | 11 24·8 5 10·3 | | | 0·017306 |
| Sept. | 17 | 9 | 15 | 59 | 6·0655 | 17 | { 10 5 10 20 | 57 59 | 11 23·3 5 9·9 | | | 0·017278 |
| Oct. | 17 | 10 | 15 | 52 | 6·0595 | 19 | { 9 40 9 50 | 58 58 | 11 24·7 5 10·4 | | | 0·017303 |
| Nov. | 18 | 11 | 18 | 52 | 6·0584 | 20 | { 11 20 11 40 | 47 47 | 11 24·1 5 10·4 | | | 0·017284 |
| Dec. | 17 | 9 | 30 | 50 | 6·0528 | 17 | { 10 50 11 0 | 50 51 | 11 23·9 5 9·9 | | | 0·017302 |

ABSOLUTE MEASURES—SUMMARY.

| DIRECTION. | | | FORCE. | | |
|--------------|--------------|-----------|-----------------|-----------|---------|
| 1907. | Declination. | Dip. | Horizontal. | Vertical. | Total. |
| | ° ' " | ° ' " | C. G. S. UNITS. | | |
| January ... | 17 44·8 | 68 46·0 | 0·17390 | 0·44756 | 0·48012 |
| February ... | 17 44·6 | 68 47·0 | 0·17360 | 0·44720 | 0·47962 |
| March ... | 17 45·3 | 68 47·0 | 0·17387 | 0·44788 | 0·48040 |
| April ... | 17 45·8 | 68 48·6 | 0·17380 | 0·44828 | 0·48077 |
| May ... | 17 46·0 | 68 46·8 | 0·17405 | 0·44828 | 0·48081 |
| June ... | 17 45·5 | 68 46·2 | 0·17411 | 0·44818 | 0·48081 |
| July ... | 17 45·3 | 68 42·9 | 0·17408 | 0·44690 | 0·47951 |
| August ... | 17 43·8 | 68 44·9 | 0·17396 | 0·44730 | 0·47995 |
| September.. | 17 43·2 | 68 48·4 | 0·17403 | 0·44881 | 0·48135 |
| October ... | 17 41·1 | 68 47·4 | 0·17392 | 0·44814 | 0·48070 |
| November .. | 17 41·0 | 68 47·7 | 0·17418 | 0·44890 | 0·48151 |
| December .. | 17 39·6 | 68 44·4 | 0·17430 | 0·44796 | 0·48068 |
| Means ... | 17 43·8 | 68 46·4 | 0·17398 | 0·44795 | 0·48052 |

HORIZONTAL MAGNETIC DIRECTION.

Horizontal Magnetic Direction, West of North (from daily measures of the continuous curves).

| 1907. | MEAN OF | | | | Differences. <i>d-c</i> | Differences of <i>a</i> and <i>b</i> or Mean daily range. | Highest reading of the month. | Lowest reading of the month. | Monthly range. |
|---------------|-------------------------------|------------------------------|-------------------------|--|--------------------------------|---|--|---------------------------------------|-------------------|
| | Highest daily readings. | Lowest daily readings. | <i>a</i> and <i>b</i> . | Daily readings at 4 a. m. and 4 p. m. | | | | | |
| | (<i>a</i>) | (<i>b</i>) | (<i>c</i>) | (<i>d</i>) | | | | | |
| | 17° + | | | | | * | 17° + | | |
| January ... | 48·9 | 35·5 | 42·2 | 42·9 | 0·7 | 13·4 | 58·8 | 9·8 | 49·0 |
| February ... | 50·6 | 32·1 | 41·4 | 42·9 | 1·5 | 18·5 | 89·8 | * | — |
| March ... | 53·1 | 34·0 | 43·6 | 44·5 | 0·9 | 19·1 | 86·4 | 11·4 | 75·0 |
| April ... | 51·8 | 35·3 | 43·6 | 44·1 | 0·5 | 16·5 | 56·4 | 25·4 | 31·0 |
| May ... | 50·4 | 35·4 | 42·9 | 43·8 | 0·9 | 15·0 | 56·4 | 20·4 | 36·0 |
| June ... | 49·3 | 34·6 | 42·0 | 42·9 | 0·9 | 14·7 | 54·4 | 25·4 | 29·0 |
| July ... | 47·9 | 33·9 | 40·9 | 41·6 | 0·7 | 14·0 | 60·4 | 24·4 | 36·0 |
| August ... | 47·9 | 33·9 | 40·9 | 40·7 | —0·2 | 14·0 | 58·2 | 25·2 | 33·0 |
| September ... | 48·8 | 34·1 | 41·5 | 40·4 | —1·1 | 14·7 | 57·2 | 7·2 | 50·0 |
| October ... | 46·6 | 32·6 | 39·6 | 39·9 | 0·3 | 14·0 | 60·1 | 20·2 | 39·9 |
| November ... | 45·5 | 31·7 | 38·6 | 39·1 | 0·5 | 13·8 | 64·8 | 12·8 | 52·0 |
| December ... | 42·4 | 33·8 | 38·1 | 38·9 | 0·8 | 8·6 | 49·8 | 22·8 | 27·0 |
| Means ... | 48·6 | 33·9 | 41·3 | 41·8 | 0·5 | 14·7 | 62·7 | 18·6 | 41·6 |

Mean for the year... .. 17° 41·8 W.

* Beyond the recording limit.

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.

| 1907. | MEAN OF | | | | Differences. <i>d-e</i> | Differences of <i>a</i> and <i>b</i> or Mean daily range. | Highest reading of the month. | Lowest reading of the month. | Monthly range. |
|---------------|-------------------------------|------------------------------|-------------------------|--|--------------------------------|---|--|---------------------------------------|-------------------|
| | Highest daily readings. | Lowest daily readings. | <i>a</i> and <i>b</i> . | Daily readings at 4 a.m. and 4 p.m. | | | | | |
| | <i>(a)</i> | <i>(b)</i> | <i>(c)</i> | <i>(d)</i> | | | | | |
| | 17000 + | | | | 0 + | | 17000 + | | 0 + |
| January ... | 425 | 383 | 404 | 403 | 1 | 42 | 507 | 297 | 210 |
| February ... | 405 | 344 | 375 | 383 | 8 | 61 | * | * | — |
| March ... | 414 | 362 | 388 | 396 | 8 | 52 | 422 | 282 | 140 |
| April ... | 414 | 344 | 379 | 390 | 11 | 70 | 442 | 322 | 120 |
| May ... | 443 | 352 | 398 | 415 | 17 | 91 | 533 | 322 | 211 |
| June ... | 459 | 368 | 414 | 424 | 10 | 91 | 523 | 338 | 185 |
| July ... | 447 | 358 | 403 | 413 | 10 | 89 | 558 | 278 | 280 |
| August ... | 440 | 358 | 399 | 405 | 6 | 82 | 498 | 308 | 190 |
| September ... | 424 | 350 | 387 | 396 | 9 | 74 | 453 | 303 | 150 |
| October ... | 429 | 356 | 393 | 403 | 10 | 73 | 459 | 309 | 150 |
| November ... | 430 | 360 | 395 | 407 | 12 | 70 | 454 | 274 | 180 |
| December .. | 426 | 389 | 408 | 410 | 2 | 37 | 475 | 340 | 135 |
| Means ... | 430 | 360 | 395 | 404 | 9 | 69 | 484 | 307 | 177 |

Mean for the year 0.17404 C. G. S. Units.

* Beyond the recording limits.

DATES OF MAGNETIC DISTURBANCES.

— — — — —

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.

| 1907. | Jan. | Feb. | March | April | May | June | July | August | Sept. | Oct. | Nov. | Dec. | 1907 |
|--------|------|------|-------|-------|-----|------|------|--------|-------|------|------|------|------|
| D. 1 | s | s | m | s | s | s | m | | s | m | c | c | D. 1 |
| 2 | c | m | c | c | s | s | m | | s | m | m | c | 2 |
| 3 | s | c | s | s | m | s | m | g | s | s | g | s | 3 |
| 4 | s | c | s | s | s | s | s | g | m | s | s | s | 4 |
| 5 | s | — | s | m | s | s | m | s | m | s | m | s | 5 |
| 6 | c | m | m | s | m | m | g | s | m | c | s | s | 6 |
| 7 | m | m | m | c | s | s | s | s | s | s | — | — | 7 |
| 8 | m | *vg | c | s | s | s | s | s | s | m | s | s | 8 |
| 9 | s | *vg | g | s | s | m | m | g | s | s | m | c | 9 |
| 10 | s | g | g | s | m | m | g | m | s | s | g | g | 10 |
| 11 | g | g | vg | s | m | m | g | m | g | s | g | g | 11 |
| 12 | m | s | m | s | m | m | m | s | g | g | s | s | 12 |
| 13 | s | m | s | m | m | m | s | c | s | g | s | m | 13 |
| 14 | g | m | s | m | m | s | s | m | s | g | s | s | 14 |
| 15 | s | s | c | m | m | s | s | s | s | m | s | s | 15 |
| 16 | s | c | c | m | m | s | s | s | g | s | s | s | 16 |
| 17 | c | c | c | s | s | s | s | s | — | — | s | s | 17 |
| 18 | c | c | c | s | m | g | m | m | m | — | s | s | 18 |
| 19 | s | m | s | s | m | g | m | m | m | s | s | s | 19 |
| 20 | c | s | s | s | m | m | s | g | m | m | m | s | 20 |
| 21 | c | s | g | s | s | m | s | m | s | g | g | s | 21 |
| 22 | s | m | s | s | s | m | m | m | c | g | m | s | 22 |
| 23 | s | m | s | s | m | s | s | m | c | s | s | c | 23 |
| 24 | s | m | s | s | m | s | m | m | s | s | s | s | 24 |
| 25 | s | m | s | s | m | s | m | s | s | s | s | s | 25 |
| 26 | s | c | s | m | s | s | m | s | m | m | s | s | 26 |
| 27 | s | s | s | m | s | s | g | s | c | g | s | s | 27 |
| 28 | s | s | s | m | m | m | m | s | m | s | s | s | 28 |
| 29 | s | s | s | m | m | s | m | m | s | m | c | s | 29 |
| 30 | s | s | c | s | s | s | s | g | g | s | c | s | 30 |
| 31 | s | s | c | s | s | s | m | s | | c | | s | 31 |
| TOTALS | c | 6 | 5 | 7 | 2 | 0 | 0 | 1 | 3 | 2 | 3 | 4 | |
| | s | 20 | 8 | 16 | 18 | 14 | 18 | 14 | 13 | 13 | 18 | 22 | |
| | m | 3 | 10 | 4 | 10 | 16 | 11 | 15 | 9 | 8 | 5 | 2 | |
| | g | 2 | 3 | 3 | 0 | 1 | 1 | 5 | 6 | 5 | 6 | 2 | |
| vg | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |

* Exceeded the limit of registration.

DATES OF SOLAR DRAWINGS.

The figures express, in decimals of a day, the Greenwich Civil Time at which the drawing was made.

| 1907. | Jan. | Feb. | March | April | May | June | July | August | Sept. | Oct. | Nov. | Dec. | 1907 |
|-------|------|------|-------|-------|-----|------|------|--------|-------|------|------|------|------|
| D. | | | | | | | | | | | | | D. |
| 1 | | | | .42 | .48 | | .40 | .74 | .37 | .45 | .42 | | 1 |
| 2 | | .50 | | .41 | .40 | | .42 | .44 | | .42 | .47 | | 2 |
| 3 | | .47 | .45 | | .51 | .48 | | .72 | .41 | .40 | | .59 | 3 |
| 4 | .47 | | .47 | .40 | | | .52 | | .37 | .41 | | | 4 |
| 5 | | .50 | | .40 | .36 | | .60 | .47 | .40 | | .49 | | 5 |
| 6 | .49 | .45 | .47 | .45 | .38 | | | .43 | .60 | | .47 | .48 | 6 |
| 7 | | .46 | | | | | .60 | | .47 | .35 | | .45 | 7 |
| 8 | | | | | .39 | | | .42 | .51 | .39 | | | 8 |
| 9 | | .58 | | .58 | .39 | .38 | .68 | .42 | .48 | .39 | .45 | | 9 |
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| 24 | | | | .38 | .45 | | .42 | .64 | .46 | .40 | | | 24 |
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| 29 | | | .43 | .40 | .38 | .43 | .47 | | | | .40 | | 29 |
| 30 | .43 | | .46 | | | .39 | .64 | .38 | | | .42 | | 30 |
| 31 | .47 | | .41 | | | | .43 | .57 | | | | | 31 |

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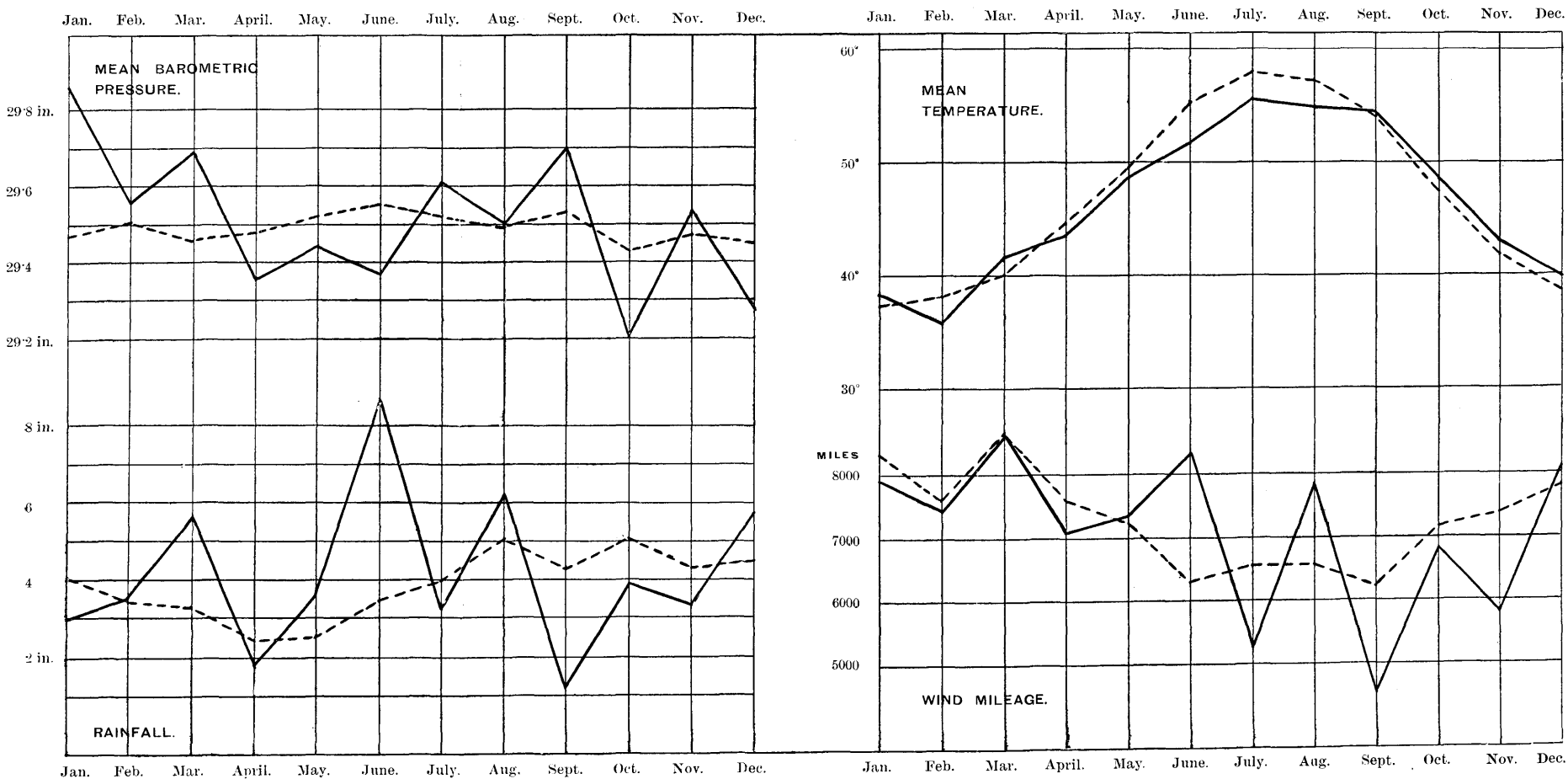
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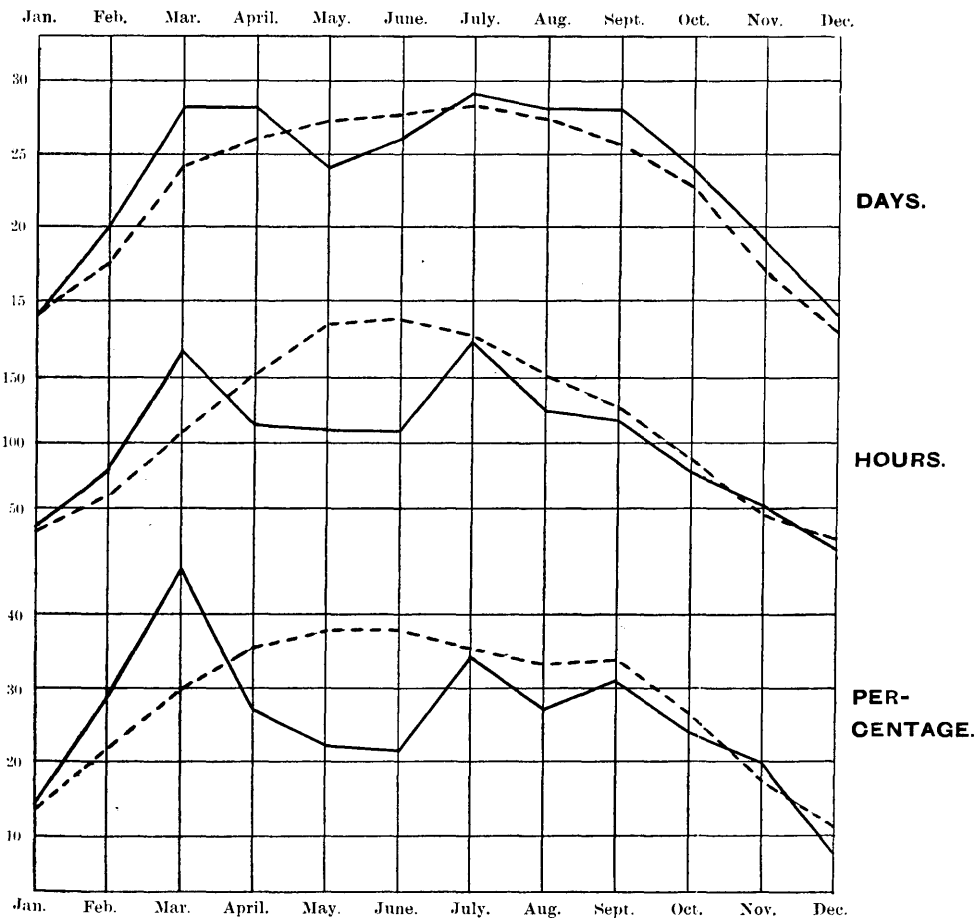
The dotted curves show the mean values for the last *60 years.



* Wind mileage 40 years only.

Recorded Sunshine of 1907.

The dotted curves show the mean values
for the last 27 years.



Annual Variation, at Stonyhurst, in four Meteorological Elements, with a comparison curve of Wolf's Smoothed Sun-Spot Relative Numbers.

The smoothed (dotted) curves are obtained from the means of five successive numbers which are themselves the means of five successive original readings.



