RESULTS

OF THE

MAGNETICAL AND METEOROLOGICAL OBSERVATIONS

MADE AT

THE ROYAL OBSERVATORY, GREENWICH,

IN THE YEAR

1911

UNDER THE DIRECTION OF

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ASTRONOMER ROYAL.

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GREENWICH MAGNETICAL AND METEOROLOGICAL OBSERVATIONS,

1911.

INTRODUCTION.

In the present volume a sufficient account is given of the instruments and methods of reduction now in use. Fuller information, principally of a historical nature, may be found in the Introductions to the volumes for 1909 and previous years.

§ 1. *Personal Establishment and Arrangements.*

During the year 1911 the personal establishment in the Magnetical and Meteorological Department of the Royal Observatory consisted of Walter William Bryant, Superintendent, aided by one Established Computer, David J. R. Edney, and four Computers. The Computers employed during the year were :—Edward Kirby, William H. Timbury, Ernest L. Richardson, Sydney T. Divers, Frederick Brown and Harold George Showell.

Mr. Bryant controls and superintends the whole of the work of the Department. The routine magnetical and meteorological observations are in general made by the Computers.

§ 2. *General Description of the Buildings and Instruments of the Magnetical and Meteorological Observatory.*

The buildings and instruments remained substantially unchanged throughout the year 1911. For a detailed historical account of them, reference should be made to the Introductions to earlier volumes of these observations.

The instruments for photographic registration of changes in the atmospheric pressure, magnetic declination, and horizontal and vertical magnetic force, are situated in an underground chamber (known as the Magnet Basement); this chamber is kept at a nearly uniform temperature by means of gas stoves. The small variations of temperature are recorded on a Richard thermograph. In the same room there are two mean solar clocks, one being of peculiar construction in order to interrupt the photographic traces at each hour. All these instruments are mounted on or suspended from supports carried by piers built from the ground.

In a wooden building (called the Magnet House) above this chamber are placed the standard barometer, and a Thomson electrometer for photographic registration of the variations of atmospheric electricity. A platform erected above the roof of the Magnet House is used for the observation of meteors; and a nephoscope is mounted there for occasional observations. On the same platform there is a rain-gauge, at a height of 20 feet above the ground.

Near the Magnet House, on what is known as the Magnet Ground, are the earth thermometers, the photographic dry and wet-bulb thermometer apparatus, a rain-gauge, and a set of dry-bulb, wet-bulb, and maximum and minimum thermometers in a Stevenson screen.

The Magnet House is built of non-magnetic material, but during the years 1891–1898 considerable masses of iron were introduced into its neighbourhood by the building of certain additions to the Observatory. Hence the instruments which were formerly placed in the Magnet House, for absolute determinations of magnetic declination, dip, and horizontal force, were transferred to the Magnetic Pavilion. This building is constructed of non-magnetic materials, and stands in an enclosure in Greenwich Park, 350 yards to the east of the Observatory, on a site carefully chosen for its freedom from abnormal magnetic conditions. In the enclosure there are two sets of thermometers used for ordinary eye observations, the thermometers for solar and terrestrial radiation, and two rain-gauges.

The anemometers, three rain-gauges, and the sunshine recorder are fixed above the roof of the Octagon Room (the ancient part of the Observatory).

§ 3. *Subjects of Observation in the year* 1911.

The observations comprise determinations of absolute magnetic declination, horizontal force, and dip; continuous photographic record of the variations of declination, horizontal force, and vertical force; eye observations of the ordinary meteorological instruments, including the barometer, dry and wet-bulb thermometers, radiation and earth thermometers, and of thermometers placed on the roof of the Magnet House ; continuous photographic record of the variations of the barometer, dry and wet-bulb thermometers, and electrometer (for atmospheric electricity) ; continuous automatic record of the direction, pressure, and velocity of the wind, and of the amount of rain ; registration of the duration of sunshine ; observations of some of the principal meteor showers ; general record of ordinary atmospheric changes of weather, including numerical estimation of the amount of cloud, special cloud observations in connection with the International Balloon ascents, and occasional phenomena.

Since 1885, Greenwich civil time, reckoning from midnight to midnight, and counting from 0 to 24 hours, has been employed throughout the magnetical and meteorological sections.

§ 4. *Magnetic Instruments.*

DECLINATION MAGNET FOR ABSOLUTE DETERMINATIONS.—Since 1899 January 1, regular observations of declination have been made in the Magnetic Pavilion. The hollow cylindrical magnet Elliot No. 75 is used in conjunction with a telescope by Troughton and Simms, placed on a pier about 2 feet south of the magnet. The magnet is about 4 inches long, and at one end is an engraved glass scale for collimation. The telescope is 21 inches long, and the aperture of its object-glass is 2 inches ; its horizontal circle is 16·6 inches in diameter, divided to 5′ and read by verniers to 5″. It has no vertical circle. The eye-piece has one fixed horizontal wire and one vertical wire, moved by a micrometer screw, the value of one revolution of which is 1′ 34″·2. The adopted collimation reading throughout the year was $100^{r}\cdot280$.

The vertical axis of the telescope is adjusted by means of a fixed level, one division of which corresponds to 1″·15. The level correction for inequality of the pivots of the axis of the telescope was found in 1898 to be $-6^{\text{div}}\cdot0$ or $-6''\cdot9$.

The reading of the azimuth circle corresponding to the astronomical meridian is determined by observations of Polaris, taken once a week whenever practicable. The collimation error of the magnet collimator is also determined weekly, by observing the position of the magnet in its usual position with the scale direct, then with the scale reversed (by turning the magnet through 180° in its carrier, about the longitudinal axis) ; the observations are repeated quickly several times. In the reduction of the observations of declination, the determinations of collimation error and azimuth zero reading are combined into half-yearly means.

The torsion effect of the silk suspending skein is eliminated as nearly as possible, and any small effect still remaining is allowed for. The reading of the torsion circle, which corresponds to free suspension in the plane of the magnetic meridian, and the ratio of the torsion couple, due to 90° of twist on the thread, to the couple due to the Earth's horizontal magnetic force, are determined weekly.

Declination observations are usually made four times daily, at 9^h, 12^h, 15^h, and 21^h.

DIP INSTRUMENT.—This instrument was designed by Sir G. B. Airy, and constructed by Troughton and Simms. It is mounted in the Magnetic Pavilion on a slate slab supported by a braced wooden stand built upon a pier insulated from the floor. It was designed so that needles of three different lengths could be used, but in practice only those 3 inches in length have been used since 1898 September 30. The pivots of the needles rest on agate bearings within a gun-metal box with back and front of glass. On the inner side of the front glass (which is parallel to the plane of vibration of the needle) is etched a graduated circle, $9\frac{3}{4}$ inches in diameter, divided to 10′ and read by two verniers to 10″. The verniers are thin plates of metal with notches instead of marks, for use with transmitted light. They are attached to a frame which can move about a horizontal axis nearly coincident with the pivot axis of the needles; two microscopes are mounted on this frame, for observation of the two ends of the needle.

The inclination of the needle is observed by turning the movable frame till the two ends of the needle (seen as a dark object in a bright field) come into view in the microscopes. The position of the movable frame is read by the circle and verniers, and the position of the needle relative to the frame is read off on glass scales within the microscopes. These scales are divided to 1000″, and can be read by estimation to 100″. A brass zenith-point needle is used to determine the zenith-point reading.

The gun-metal box is mounted on a circular horizontal plate which can be rotated in azimuth, its position being read on a graduated circle by fixed verniers.

There are two levels, at right angles, on the base-plate; the level is adjusted from time to time, and the readings of dip are corrected for any small outstanding level error (generally amounting to a few seconds of arc).

Observations are made only in the plane of the magnetic meridian. The needle is first magnetised by double touch, giving it nine strokes on each of its sides. Its inclination to the horizontal, when placed in the instrument, having been read, the whole apparatus is reversed in azimuth, and another reading taken. The needle pivots are then reversed on the agate bearings, and two more observations, in reversed positions of the instrument, are made. We will denote the mean of these four determinations of dip by θ_1. The needle is then taken out, remagnetised in the reverse direction, and four more observations are made in the same way, giving another mean reading θ_2.

Dip observations are made twelve times in each calendar month, at approximately equal intervals.

A systematic difference between θ_1 and θ_2 is assumed to indicate that the mass centre of the needle is not in the axis of the pivots. It may easily be seen that, on this supposition, the true inclination θ is given by the relation,

$$\tan\theta = \tfrac{1}{2}(\tan\theta_1 + \tan\theta_2).$$

The values of the dip given in this volume are obtained from this formula.

DEFLECTION INSTRUMENT FOR ABSOLUTE DETERMINATIONS OF HORIZONTAL FORCE.—This instrument (known as Gibson No. 3) is similar to those issued from the Kew Observatory. It is mounted on a slate slab in the Magnetic Pavilion in the same way as the dip instrument.

The deflected magnet, used merely to ascertain the ratio which the power of the deflecting magnet at a given distance bears to the power of terrestrial magnetism, is 3 inches long, and carries a small plane mirror, to which is directed a telescope fixed to, and rotating with, the frame that carries also the suspension piece of the deflected magnet: a scale fixed to the telescope is seen by reflexion at the plane mirror. The deflecting magnet is a hollow cylinder 4 inches long, containing in its internal tube a collimator, by means of which in another apparatus its time of vibration is observed. In observations of deflection the deflecting magnet is placed on the transverse deflection rod, carried by the rotating frame, at the distances 1·0 foot and 1·3 foot of the engraved scale from the deflected magnet, and with one end towards the deflected magnet. Observations are made at the two distances mentioned, with the deflecting magnet both east and west of the deflected magnet, and also with its poles in reversed positions. The fixed horizontal circle is 10 inches in diameter: it is graduated to 10′, and read by two verniers to 10″.

It will be convenient in this case to include with the description of the instrument an account of the method of reduction employed, in which the Kew precepts are followed. Previous to the establishment of the instrument at the Royal Observatory, the values of the various instrumental constants, as determined at the Kew Observatory, were kindly communicated by the late Professor Balfour Stewart, and these have been since used in reduction of all observations made with the instrument at Greenwich.

The instrumental constants as thus furnished are as follows :—

The increase in the magnetic moment of the deflecting magnet produced by the inductive action of unit magnetic force in the English system of absolute measurement = μ = 0·00015587.

The correction for decrease of the magnetic moment of the deflecting magnet required in order to reduce to the temperature 35° Fahrenheit $= c = 0{\cdot}00013126\,(t-35) + 0{\cdot}000000259\,(t-35)^2$; t representing the temperature (in degrees Fahrenheit) at which the observation is made.

Moment of inertia of the deflecting magnet = K. At temperature 30°, log. K = 0·66643; at temperature 90°, log. K = 0·66679.

The distance on the deflection rod from $1^{\text{ft}}{\cdot}0$ east to $1^{\text{ft}}{\cdot}0$ west of the engraved scale, at temperature 62°, is too long by 0·0034 inch, and the distance from $1^{\text{ft}}{\cdot}3$ east to $1^{\text{ft}}{\cdot}3$ west is too long by 0·0053 inch. The coefficient of expansion of the scale for 1° is ·00001.

The adopted value of K was confirmed in the year 1878 by a new and independent determination made at the Royal Observatory, giving log. K at temperature 30° = 0·66727.

Let m = Magnetic moment of deflecting or vibrating magnet.
X = Horizontal component of Earth's magnetic force.

Then, if in the two deflection observations, r_1, r_2, be the apparent distances of centre of deflecting magnet from deflected magnet, corrected for scale-error and temperature (about 1·0 and 1·3 foot),

u_1, u_2 the observed angles of deflection,

$$A_1 = \tfrac{1}{2}\, r_1^3 \sin u_1 \left\{ 1 + \frac{2\mu}{r_1^3} + c \right\}$$

$$A_2 = \tfrac{1}{2}\, r_2^3 \sin u_2 \left\{ 1 + \frac{2\mu}{r_2^3} + c \right\}$$

$P = \dfrac{A_1 - A_2}{\dfrac{A_1}{r_1^2} - \dfrac{A_2}{r_2^2}}$ [P being a constant depending on the distribution of magnetism in the deflecting and deflected magnets],

we have, using for reduction of the observations a mean value of P :—

$\dfrac{m}{X} = A_1\left(1 - \dfrac{P}{r_1^2}\right)$, from observation at distance r_1.

$\dfrac{m}{X} = A_2\left(1 - \dfrac{P}{r_2^2}\right)$, from observation at distance r_2.

The mean of these is adopted as the true value of $\dfrac{m}{X}$.

In calculating the value of P as well as the values of the four factors within brackets, the distances r_1 and r_2 are taken as being equal to 1·0 ft. and 1·3 ft. respectively. The expression for P is not convenient for logarithmic computation, and, in practice, its value for each observation has, since the year 1877, been calculated from the expression $\frac{\text{Log. } A_1 - \text{Log. } A_2}{\text{modulus}} \times \frac{r_1^2 \times r_2^2}{r_2^2 - r_1^2} = (\text{Log. } A_1 - \text{Log. } A_2) \times 5{\cdot}64.$

For determination, from the observed vibrations, of the value of mX :—let T_1 = time of vibration of the deflecting magnet, corrected for rate of chronometer and arc of vibration, $\frac{H}{F}$ = ratio of the couple due to torsion of the suspending thread to the couple due to the Earth's magnetic force. [This is obtained from the formula $\frac{H}{F} = \frac{\theta}{90^\circ - \theta}$, where θ = the angle through which the magnet is deflected by a twist of 90° in the thread.]

$$\text{Then } T^2 = T_1^2 \left\{ 1 + \frac{H}{F} + \mu\frac{X}{m} - c \right\}$$
$$\text{and } mX = \frac{\pi^2 K}{T^2}.$$

The corrected time of vibration of the deflecting magnet, printed in the tables of results, is the mean of 100 vibrations observed immediately before, and of 100 vibrations observed immediately after the observations of deflection, corrected for temperature, rate of chronometer, semi-arc of vibration, induction, and torsion force.

From the values of mX and $\frac{m}{X}$ thus calculated, m and X are deduced. The actual computation is made in the British system of units (foot—grain—second). The derived value of X is then reduced to C.G.S. units, as given in the tables.

Observations of the absolute horizontal magnetic force are made twice monthly.

DECLINATION VARIOMETER.—The magnet used in this instrument is 2 feet long, $1\frac{1}{2}$ inches wide, and $\frac{1}{4}$ inch thick. It is suspended by a skein of silk, consisting of a bundle of fine threads bound together at intervals of 6 or 7 inches : the skein is about 12 feet long, 6 feet of which is vertical. The suspension skein gave way on June 3, and a new one was mounted on June 5. The magnet is taken from its carrier at the beginning of each year, in order to remove any torsion which may have accumulated ; this is done by stretching the skein under the weight of a brass torsion rod for a few hours, adjusting the torsion circle till the bar rests in the magnetic meridian. The magnet is enclosed in a double wooden box, and is encircled by a copper damper to reduce accidental vibrations.

The photographic registration takes place in the usual way, on a horizontal cylinder which revolves once in 26 hours ; the same sheet also receives the record of the horizontal force variometer. The illumination is by gas-light. The photographic sheets are changed daily at 11 a.m. On each sheet a reference line is photographed by a fixed spot of light. The traces are interrupted automatically for 4 minutes at every hour, to afford a time scale. By another shutter the observer occasionally cuts off the light for a few minutes, noting the time; this facilitates the numeration of the hourly breaks. The length of 24 hours on the sheet is about 13·3 inches.*

The distance between the concave speculum mirror carried by the magnet, and the surface of the cylinder, is 134·4 inches. Since a movement of the mirror through 1° produces 2° of motion in the reflected ray, a change of 1° in declination corresponds to 4·691 inches on the photographic paper. A card-board strip, graduated on this scale to degrees and minutes, is prepared for reading from the sheets.

The base line is laid down as follows: the movement of the magnet is assumed to be identical with that of the absolute declination magnet, so that every observation with the latter affords a value of the base line. These values (of which four are obtained daily) are taken in monthly groups, the means being adapted for use throughout the corresponding months. Then, by means of the card-board scale, a base line (whose ordinate represents some convenient quantity) is laid down upon each sheet; from this line the hourly ordinates (see p. E xiii) are measured.

No eye readings of the position of this magnet are taken.

HORIZONTAL FORCE VARIOMETER.—The magnet used in this instrument is 2 feet long, $1\frac{1}{2}$ inches broad, and about $\frac{1}{4}$ inch thick; it is enclosed in a double wooden box. The bifilar suspension consists of a silk skein passing under two small pulleys, which are attached to a vernier piece used in connection with a torsion circle on the frame which holds the magnet. The effective length of each branch of the skein is about $7^{ft.}\ 6^{in.}$; the distances between the branches at the upper and lower ends are respectively $1^{in.}{\cdot}14$ and $0^{in.}{\cdot}80$. The present skein was mounted in 1909 December.

The torsion circle is fixed relative to the magnet, while the vernier is movable; the circle is divided to half degrees, and read by vernier to 1′. The torsion is adjusted so as to make the magnet hang approximately transverse to the magnetic meridian, the north magnetic pole being west. Accidental vibrations of the magnet are reduced by a copper damper.

The changes of horizontal force are registered photographically on the cylinder already described in connection with the declination variometer; the same reference line is used for each trace, and the arrangements for interruption of the traces are similar.

* In accordance with a circular from Dr Chree requesting co-operation in "quick speed" magnetograms for the Term-days of the Antarctic Expedition, two new driving clocks were supplied, one for the Declination and Horizontal Force Magnetograph, and the other for the Vertical Force. By a simple changing device, these can be made to drive the cylinders at the ordinary rate, or at twelve times the ordinary rate.

In the present case eye-readings of the position of the magnet can also be taken by means of an auxiliary mirror, telescope, and scale. The eye observations are usually made at $9\frac{1}{2}^{h}$, $12\frac{1}{2}^{h}$, $15\frac{1}{2}^{h}$, and $20\frac{1}{2}^{h}$.

Since 12 inches of the fixed scale corresponds to $30^{div.}\cdot 85$, while the mirror is 90·84 inches distant (in a normal direction) from the scale, it appears that, for a change of one division of scale-reading, the magnet is turned through an angle of $7'.21''\cdot 6$, or (in circular measure) 0·002141. We will denote these two corresponding quantities by k and k_1 respectively.

The magnet should be within two or three degrees of arc on either side of the ideal position (*i.e.* magnetic east and west direction), if it is to indicate truly the changes in the magnitude of the horizontal magnetic force, without regard to small changes in its direction. Suppose ϕ is the angle of torsion, and θ the circular measure of the deviation of the magnetic axis from the ideal position, θ being reckoned positive when the north pole of the magnet is north of west; then the variation of the horizontal force—in terms of the whole horizontal force as unit—which will produce angular motion of the magnet corresponding to change of one scale-division, is

$$k\,(\cot\phi + \tan\theta).$$

Changes in θ are easily measured by the fixed scale; but there is no direct means of determining the scale zero, viz., the scale-reading for the position $\theta = 0$. This, together with the value of the angle of torsion, is determined annually (in order to break the continuity of the photographic register as seldom as possible) by the following method.

The torsion-circle being set so that the magnet is nearly east and west, readings of the torsion vernier (V_1), of the scale (S_1), and of the time of vibration (T_1) in this position, are carefully taken. The magnet is then taken out and replaced in the reverse position, end to end, in its carrier; the magnetic couple being thus reversed, the vernier-reading on the torsion scale must be changed by twice the angle of torsion (which is approximately known beforehand) in order to maintain the magnet transverse to the meridian. A finer adjustment is made, if necessary, while the magnet is in position. Corresponding readings are taken, of vernier (V_2), scale (S_2), and time of vibration (T_2). Lastly, the magnet is replaced in its original position, in which it remains (in general) until the following year's torsion observations. Again the three readings, V_3, S_3, T_3, are taken.

Then for the angle of torsion we have

$$\phi = \tfrac{1}{4}(2V_2 - V_1 - V_3) + \tfrac{1}{2}\,k_1(S_1 + S_3 - 2S_2),$$

while the scale zero S_0 is given by the formula

$$S_0 = \tfrac{1}{4}\,(S_1 + S_3 + 2S_2) + \frac{1}{k}\,\frac{T_1 + T_3 - 2T_2}{T_1 + T_3 + 2T_2}\cot\phi$$

Two determinations of ϕ and S_0 are made by taking two sets of observations of S, V, and T in each position of the magnet, with slightly different vernier readings.

The above method of determining the scale value was not used before the beginning of 1911, but the formulæ could be applied to the observations taken in connection with the method formerly used (a description of the latter is given in the volumes for 1908 and earlier years). A table of corrections (calculated from these formulæ) appeared in the Introduction to the Magnetical Observations for 1909 (see p. xv.), giving the percentage error in the scale values adopted for the horizontal force magnetographs in the years 1883–1909.

From experiments on 1910 December 30, it was found that the angle of torsion was 41° 56′, and the scale zero was 56·79; from similar experiments on 1912 January 1, the corresponding values found were 42° 8′ and 51·35. The mean scale reading during the year 1911 was about 52. The adopted values of ϕ and θ for the reduction of the observations for 1911 are 42° 2′ and −15′. Thus the value of cot ϕ + tan θ is 1·1052.

Since the distance between the concave mirror carried by the magnet and the surface of the cylinder is 136·8 inches, the length on the cylinder which corresponds to a change of 0·01 of the whole horizontal force is $2 \times 0{\cdot}01 \times 136{\cdot}8 \div (\cot\ \phi + \tan\ \theta) = 2^{\text{in.}}{\cdot}476$ during the year 1911; the cardboard scale used for measuring the curves is constructed with this as unit.

As the indications of horizontal force are in a slight degree affected by the small changes to which the Magnet Basement is subject, a thermometer, the bulb of which reaches considerably below the attached scale, is placed in a nearly upright position on the outer magnet box, with its bulb projecting well into the interior of the inner box. Readings of this thermometer are usually taken at 9^h, 10^h, 11^h, 12^h, 13^h, 14^h, 15^h, 16^h, and 21^h. An index correction of −0°·3 has been applied to all the readings.

The temperature coefficient of the magnet was determined by artificially heating the Magnet Basement to different temperatures, and observing the change of position of the magnet produced thereby. Such experiments were made in the years 1868, 1885, and 1886 (see previous volumes for details). A discussion of the observations taken in 1885 and 1886 shows that the correction for reduction to temperature 32° (expressed in terms of the whole horizontal force) is $(+ - 32) \times 0{\cdot}0000936 + (+ - 32)^2 \times {\cdot}000002074$, the temperature ± being in degrees Fahrenheit. The decrease of horizontal force for an increase of 1° of temperature would thus be ·00021 at 60°, ·00023 at 65°, and ·00025 at 70°.

The eye readings of the position of the magnet, in conjunction with the photographic record of the position at the same times, serve as a check on the constancy of the recording arrangements.

VERTICAL FORCE VARIOMETER.—The magnet used in this instrument is $1\frac{1}{2}$ feet long, and lozenge-shaped, being broad at the centre and pointed at the ends. The steel knife-edge, which is 8 inches long, and passes through an aperture in the magnet, rests on two agate planes. The magnet is placed unsymmetrically on the knife edge, being nearer to its southern end. The axis of vibration was originally in the magnetic meridian, but is now a few degrees distant, on account of the secular change of declination.

Two steel screw stalks, carrying adjustable screw weights, are attached to the magnet, one being vertical in order to vary the sensitiveness, the other horizontal in order to adjust the balance of the magnet, which should rest in a nearly horizontal position. Formerly a copper damper encircled the magnet, but, as it was found to be unnecessary, it has not been used since 1902. The magnet and supporting frame are enclosed in a wooden box with suitable glass-covered apertures. The temperature within the box is indicated by a thermometer, the bulb of which projects well into the interior of the box.

The photographic arrangements are generally similar to those already described in connection with the declination and horizontal force variometers. The cylinder carrying the photographic sheet is in this case vertical, and also receives the record of the variations of barometric pressure. The time scale is the same as for the other magnetic registers.

The scale coefficient of the instrument is determined by the method of vibrations. When the magnet is approximately horizontal, and transverse to the magnetic meridian, the variation of the vertical force, in terms of the whole vertical force, which will produce a small angular motion θ (measured in radians) = cotan dip $\times \left(\frac{T^1}{T}\right)^2 \times \theta$; T and T^1 are the times of vibration of the magnet in the vertical and horizontal planes respectively.

Observations of T are made once a week by means of the telescope and scale provided for eye readings of the position of the magnet. The mean of 54 observations made during the year gives the value $18^s \cdot 272$.

The time of vibration in the horizontal plane (T^1) is determined once every three years, as the observation requires the removal of the magnet from its box. The magnet, with all its attached parts, is suspended from a tripod, with its broad side horizontal. The arc of vibration is kept small. Observations on 1912 January 1 gave for the time of vibration in the horizontal plane 16^s·484. This value has been adopted for the year 1911.

Since the distance between the concave mirror of the magnet and the surface of the cylinder is 100·2 inches, the length on the cylinder, in inches, which corresponds to a change of 0·01 part of the whole vertical force = 2 × 100·2 × tan dip × $\left(\frac{T}{T^1}\right)^2$ × 0·01. Taking T = 18^s·272, T^1 = 16^s·484, and dip = 66° 52′ 6″, this length is found to be 5·764 inches. The cardboard scale, which is used for measuring the curves for the year, is constructed with this as unit.

The eye readings, which are taken at 9½^h, 12½^h, 15½^h, and 20½^h, afford a check on the recording arrangements, when compared with the photographic record of the position of the magnet at the same times.

Readings of the temperature within the box are taken at 9^h, 10^h, 11^h, 12^h, 13^h, 14^h, 15^h, 16^h, and 21^h. Experiments made in 1885 and 1886 (details of which are given in the Introduction for 1886) showed that, through the range of temperature to which the magnet is normally exposed, the apparent increase of vertical force for 1° rise of temperature (Fahrenheit) is uniformly 0·000212. No term depending on the square of the temperature is necessary in this case.

§ 5. *Magnetic Reductions.*

The results given in the Magnetic Section refer to the civil day, commencing at midnight.

Before the photographic records of magnetic declination, horizontal force, and vertical force are discussed, they are divided into two groups—one including all days on which the traces show no particular disturbance, and which, therefore, are suitable for the determination of diurnal inequality; the other comprising days of unusual and violent disturbance, when the traces are so irregular that it appears impossible to treat them except by the exhibition of every motion of each magnet through the day. Following the principle of separation hitherto adopted, there are no days in the year 1911 which are classed as days of great disturbance. Days of lesser disturbance are January 24–25, February 21–22, 22–23, April 8–9, 16, May 14–15, October 10–11, December 11.

When two days are mentioned, it is to be understood that the reference is usually to one set of photographic sheets extending from noon to noon, and including the last half and the first half respectively of two consecutive civil days.

Through each photographic trace, including those on days of lesser disturbance, a pencil line was drawn, representing the general form of the curve without its petty irregularities. The ordinates of these pencil curves were then measured, with the proper pasteboard scales, at every hour; and from the tables of these measures, for each calendar month, are obtained the mean monthly values for each hour of the day, and the mean daily value of the element for each day of the month. The daily mean is taken from the 24 ordinates 0^h to 23^h. Tables I. and II. contain the results for declination, Tables III. to VI. those for horizontal force, with corresponding tables of temperature, and Tables VII. to X. those for vertical force, with corresponding tables of temperature. In the formation of diurnal inequalities it is unimportant whether a day omitted be a complete civil day, or the parts of two successive civil days making together a whole day, although in the latter case the results are not available for daily values. No days were omitted on account of great disturbance in the formation of these Tables, but from other causes there are omitted in Tables I. and II. for declination, June 4 and 5.

Table XI. gives the collected monthly values for declination, horizontal force, and vertical force, and Table XII. the mean diurnal inequalities for the year.

By means of two stoves placed in the Basement, the temperature has been kept nearly constant throughout the year, the endeavour being to keep it as near to 67° as possible. Since 1883 the results in Tables III., V., VII., and IX. have been given as corrected for temperature, as well as without this correction. In Tables XI. and XII., only results corrected for temperature are given. The corrections applied (which are mentioned in the description of each instrument) are founded on the daily and hourly values of temperature given in Tables IV., VI., VIII., and X.

In regard to the formation of the tables of temperature, the hourly readings of the Richard Thermograph were combined so as to give the mean daily values for each day of the month, and the mean monthly values for each hour of the day. To adapt these to represent the temperature within the horizontal and vertical force magnet boxes respectively, the monthly means of the thermograph-readings at 9^h, 10^h, 11^h, 12^h, 13^h, 14^h, 15^h, 16^h, and 21^h were compared with the corresponding means of the eye readings of the thermometers whose bulbs are within the respective magnet boxes, giving corrections to the thermograph-readings at these hours, which were very accordant, and from which, by interpolation, corrections were obtained for the remaining hours. The nine daily observations gave also the means of reducing the daily thermograph values to the temperature of the interior of the respective magnet boxes. The results are given in Tables IV., VI., VIII., and X.

In order to economise space, the daily values, as exhibited in Tables III. and VII., both uncorrected and corrected, have been diminished by constants. The division ══════ in these Tables and in Table XI. indicates that the instrument has been disturbed for experiment or adjustment, or that for some reason the continuity of the values has been broken, the constants deducted being different before and after each break. In the interval between two breaks the values of *u* and *c* are each comparable throughout, remarking only that in certain cases it is to be understood that the values are to be taken 1000 greater or less for comparison with adjacent values. See, for example, *c* in Table III. on February 18, which should be taken as 1018 for comparison with the adjacent values, and similarly in other cases. The excess of the value of *c* above that of *u* on any day (supposing *c*, when the smaller value, to be increased by 1000) shows the correction for temperature that has been actually applied. In Tables II., V., IX., and XII. the separate hourly values of the different elements have been simply diminished by the smallest hourly value.

The variations of declination are given in the sexagesimal division of the circle, and those of horizontal and vertical force in terms of ·00001 of the whole horizontal and vertical forces respectively taken as units. In Tables XI. and XII. they have been also expressed in C.G.S. measure.

Table XIII. exhibits the diurnal range of declination and horizontal force on each separate day, as determined from the 24 hourly ordinates of each element measured from the photographic register (as explained on page E xiii), and the monthly means of these numbers, the results for horizontal force being corrected for temperature. The first portion of Table XIV. contains the difference between the greatest and least hourly mean values in each month, for declination, horizontal force, and vertical force, as extracted from Table II. and columns *c* of Tables V. and IX. In the second portion of the table there are given for each month the numerical sums of the deviations of the 24 hourly values from the mean, taken without regard to sign.

The magnetic diurnal inequalities of declination, horizontal force, and vertical force, for each month and for the year, as given in Tables II., V., and IX., have been treated by the method of harmonic analysis, and the results are given in Tables XV. and XVI.

The values of a_5 and b_5 for the diurnal inequalities for the year were also calculated, but could not be conveniently included in Table XV. They are as follows :—

1911.	a_5.	b_5.
	′	′
Declination	−0·07	0·00
Horizontal Force	−0·1	−0·7
Vertical Force	+0·6	−0·1

In order to give some indication of the accuracy with which the results of observation are represented by the harmonic formula, the sums of squares of residuals remaining after the introduction of m and of each successive pair of terms of the expression on page E 12, corresponding to the single terms of the expressions on page E 13, have been calculated for the mean diurnal inequalities for the year (columns 1, 2, and 3 of Table XII.). The respective sums of squares of residuals are as follows :—

SUMS OF SQUARES OF RESIDUALS OF DIURNAL INEQUALITIES.

	Declination.	Horizontal Force.	Vertical Force.
Sums of Squares of Observed Values (Table XII.)	147′·87	195062·9	15573·6
Sums of Squares of Residuals after the introduction of m	74·02	38601·7	2817·7
,, ,, a_1 and b_1	30·54	6184·6	1752·4
,, ,, a_2 and b_2	4·52	1391·8	197·3
,, ,, a_3 and b_3	0·60	441·7	15·9
,, ,, a_4 and b_4	0·07	31·7	9·2
,, ,, a_5 and b_5	0·02	26·3	4·7

The unit in the case of horizontal and vertical force being ·00001 of the whole horizontal and vertical forces respectively, it thus appears that there would be no advantage in carrying the approximation (Table XV.) beyond the determination of a_4, b_4.

As regards Magnetic Dip, the result of each complete observation of dip with each of the needles in ordinary use, is given in Table XVII.; and in Table XVIII., the concluded monthly and yearly values for each needle.

The results of the observations for Absolute Measure of Horizontal Force contained in Table XIX. require no special remark, the method of reduction and all necessary explanation having been given with the description of the instrument employed. The observed result in each month has been also given as reduced to the mean value for the month, by application of the difference between the horizontal force ordinate at the time of observation and the mean value for the month, as obtained from the photographic register.

In order to facilitate the comparison of the diurnal inequalities of magnetism at the different British and other magnetic observatories, an arrangement was made with the Sub-Committee of the Kew Committee of the Royal Society, by which five quiet days were selected at Greenwich in each month of every year for adoption at all these observatories for determination of the monthly diurnal inequalities of declination, horizontal force, and vertical force, thus providing for further discussion results which should be strictly comparable. Beginning with 1911, the five days selected by the International Committee from a comparison of data from all contributing stations, have been adopted instead. The particular days selected are given on page E 18, and the results found for Greenwich are contained in Tables XX., XXI., and XXII., which it is interesting to compare with the values found from the records of all days, as given in Tables II., V., IX., and XII.

Reduced copies of the magnetograms for certain disturbed days (mentioned on p. E xii) have been printed in each volume since 1882. The list of these days since the year 1889 has been selected in concert with M. Mascart, or his successor M. Angot, so that the two Observatories of Val Joyeux (formerly of the Parc Saint Maur) and Greenwich should publish the magnetic registers for the same days of disturbance with a view to the comparison of the results. It is proposed to follow this plan in future years, and if other magnetic observatories should eventually join in the scheme for concerted action, in regard to the publication of their registers, the discussion of magnetic perturbations would be much facilitated.

The plates are preceded by a brief description of *all* other significant magnetic motions (superposed on the ordinary diurnal movement) recorded throughout the year. These, in combination with the plates, give very complete information on magnetic disturbances during the year 1911, affording thereby, it is hoped, facilities for making comparison with solar phenomena.

In regard to the plates, it may be remarked that on each day three distinct registers are usually given, viz.: declination, horizontal force, and vertical force; all necessary information for proper understanding of the plates being added in the notes on page (E 34).

An additional plate (IV.) exhibits the registers of declination, horizontal force and vertical force on four quiet days, which may be taken as types of the ordinary diurnal movement at four seasons of the year. These are given for the civil day as exhibiting more clearly the character of the diurnal movement.

The indications of horizontal and vertical force are given precisely as registered; they are therefore affected, slightly as compared with the amount of motion on disturbed days, by the small recorded changes of temperature of the magnets. The recorded hourly temperatures being inserted on the plates, reference to the temperature-correction of the magnets, given at pages E x to E xii, will show the effect produced. Briefly, an increase of about $4\frac{1}{2}^\circ$ of temperature throws the horizontal force curve upward by 0·001 of the whole horizontal force; an increase of about 5° of temperature throws the vertical force curve downward by 0·001 of the whole vertical force.

The original photographs have been reduced in the proportion of 20 to 11 on the plates, and the corresponding scale values are :—

	mm.	
1° of Declination is	65·53	on the Plates.
0·01 of Horizontal Force is	34·58	,, ,,
0·01 of Vertical Force is	80·52	,, ,,

The scales actually attached to the plates are, however, so arranged as to correspond with the tables of the magnetic section—that is to say, the units for horizontal force and vertical force are ·00001 of the whole horizontal and vertical forces respectively, the numbers being in some cases increased by 1000 to avoid negative quantities. At the foot of each plate equivalent scales, in C.G.S. measure, are given for each of the magnetic registers.

Since the preceding scale values are not immediately comparable for the different elements, it therefore becomes desirable to refer them all to the same unit, say 0·01 of the horizontal force.

Now, the transverse force represented by a variation of 1° of Declination

= ·0175 of Horizontal Force,

and Vertical Force = Horizontal Force × tan dip [adopted dip = 66°.52′.6″]

= Horizontal Force × 2·3409;

whence we have the following equivalent scale values for the different elements :—

mm.			
37·4	on the Declination	Curve	corresponds to 0·01 of Horizontal Force.
34·6	,, Horizontal Force	,,	,, ,, ,, ,,
34·4	,, Vertical Force	,,	,, ,, ,, ,,

If we divide the last three numbers by 0·18529, we get $202^{\text{mm}}\cdot1$, $186^{\text{mm}}\cdot6$, $185^{\text{mm}}\cdot6$, which represent the lengths on the respective three curves equivalent to 0·01 C.G.S. unit.

The subjoined table gives the values of Magnetic Elements determined at the Royal Observatory, Greenwich :—

Year.	Declination West.	Horizontal Force, C.G.S. Unit.	Dip.†	Year.	Declination West.	Horizontal Force, C.G.S. Unit.	Dip.†
	° ′		° ′		° ′		° ′
1841	23.16·2	...	...	1876	19. 8·3	0·1797	67.41·0
1842	23.14·6	...	...	1877	18.57·2	0·1799	67.39·7
1843	23.11·7	...	69. 0·6	1878	18.49·3	0·1801	67.38·2
1844	23.15·3	...	69. 0·3	1879	18.40·5	0·1803	67.37·0
1845	22.56·7	...	68.57·5	1880	18.32·6	0·1804	67.35·7
1846	22.49·6	0·1731	68.58·1	1881	18.27·1	0·1805	67.34·7
1847	22.51·3	0·1736	68.59·0	1882	18.22·3	0·1804	67.34·2
1848	22.51·8	0·1731	68.54·7	1883	18.15·0	0·1810	67.31·7
1849	22.37·8	0·1733	68.51·3	1884	18. 7·6	0·1812	67.29·7
1850	22.23·5	0·1738	68.46·9	1885	18. 1·7	0·1816	67.28·0
1851	22.18·3	0·1744	68.40·4	1886	17.54·5	0·1816	67.27·1
1852	22.17·9	0·1745	68.42·7	1887	17.49·1	0·1818	67.26·6
1853	22.10·1	0·1748	68.44·6	1888	17.40·4	0·1820	67.25·6
1854	22. 0·8	0·1749	68.47·7	1889	17.34·9	0·1821	67.24·3
1855	21.48·4	0·1756	68.44·6	1890	17.28·6	0·1823	67.23·0
1856	21.43·5	0·1759	68.43·5	1891	17.23·4	0·1825	67.21·5
1857	21.35·4	0·1769	68.31·1	1892	17.17·4	0·1827	67.20·0
1858	21.30·3	0·1762	68.28·3	1893	17.11·4	0·1829	67.17·9
1859	21.23·5	0·1761	68.26·9	1894	17. 4·6	0·1829	67.17·4
1860	21.14·3	...	68.30·1	1895	16.57·4	0·1832	67.16·1*
1861	21. 5·5	0·1773 0·1757	68.24·6 68.15·8	1896 1897	16.51·7* 16.45·8*	0·1833* 0·1836	67.15·1* 67.13·5*
1862	20.52·6	0·1761	68. 9·6	1898	16.39·2*	0·1838	67.12·1
1863	20.45·9	0·1763	68. 7·0	1899	16.34·2	0·1842	67.10·5
1864	...	0·1765	68. 4·1	1900	16.29·0	0·1844	67. 8·8
1865	20.33·9	0·1765	68. 2·7	1901	16.26·0	0·1848	67. 6·4
1866	20.28·0	0·1771	68. 1·3	1902	16.22·8	0·1850	67. 3·8
1867	20.20·5	0·1776	67.57·2	1903	16.19·[illegible]	0·1850	67. 1·2
1868	20.13·1	0·1777	67.56·5	1904	16.15·0	0·1852	66.57·6
1869	20. 4·1	0·1780	67.54·8	1905	16. 9·9	0·1852	66.56·3
1870	19.53·0	0·1782	67.52·5	1906	16. 3·6	0·1852	66.55·6
1871	19.41·9	0·1785	67.50·3	1907	15.59·8	0·1853	66.56·2
1872	19.36·8	0·1787	67.47·8	1908	15.53·5	0·1853	66.56·3
1873	19.33·4	0·1791	67.45·8	1909	15.47·6	0·1853	66.54·1
1874	19.28·9	0·1795	67.43·6	1910	15.41·2	0·1853	66.52·8
1875	19.21·2	0·1795	67.42·4	1911	15.33·0	0·1853	66.52·1

* Corrected for the effect of the iron in the new buildings (see p. E ii).

† These values of the dip differ slightly in some instances from those given in previous volumes, on account of the correction described on p. E v.

In 1861 the new Unifilar Apparatus for absolute Horizontal Force and the Airy Dip-Circle were introduced, both sets of apparatus being used in that year. In 1864 the excavation of the Magnetic Basement caused the suspension of complete Declination Observations.

Slight interruptions in the traces on the plates are due to various causes. In the originals there are breaks at each hour for time scale, so slight, however, that in the copies the traces could usually be made continuous without fear of error: in a few cases, however, this could not be done. Further, to check the numeration of hours, the observer interrupts the register at definite times for about five minutes, usually at or near $9^{h}\ 30^{m}$, $12^{h}\ 30^{m}$, and $20^{h}\ 30^{m}$ Greenwich civil time.

The original photographic records were first traced on thin paper, the separate records on each day being arranged one under another on the same sheet, and great attention being paid to accuracy as regards the scale of time. Each sheet containing the records for one or more days was then reduced by photo-lithography, in the proportion of 20 to 11, to bring it to a convenient size for insertion in the printed volume.

§ 6. *Meteorological Instruments.*

STANDARD BAROMETER.—The standard barometer, mounted in 1840 on the southern wall of the western arm of the Upper Magnet Room, is Newman No. 64. Its tube is $0^{in}\cdot565$ in diameter, and the depression of the mercury due to capillary action is $0^{in}\cdot002$, but no correction is applied on this account. The cistern is of glass, and the graduated scale and attached rod are of brass; at its lower end the rod terminates in a point of ivory, which in observation is made just to meet the reflected image of the point as seen in the mercury. The scale is divided to $0^{in}\cdot05$, sub-divided by vernier to $0^{in}\cdot002$.

The readings of this barometer, until 1866 August 20, are considered to be coincident with those of the Royal Society's flint-glass standard barometer. It then became necessary to remove the sliding rod for repair of its slow motion screw, which was completed on August 30. Before the removal of the rod the barometer had been compared with three other barometers, one of which, during repair of the rod, was used for the daily readings. After restoration of the rod, a comparison was again made with the same three barometers, from which it appeared that the readings of the standard, in its new state, required a correction of $-0^{in}\cdot006$, all three auxiliary barometers giving accordant results. This correction has been applied to every observation since 1866 August 30.

An elaborate comparison of the standard barometers of the Greenwich and Kew Observatories, made in the spring of the year 1877, under the direction of the Kew Committee, by Mr. Whipple, showed that the difference between the two barometers (after applying to the Greenwich barometer-readings the correction $-0^{in}\cdot006$) did not exceed $0^{in}\cdot001$. (*Proceedings of the Royal Society*, vol. xxvii. page 76.)

The height of the barometer cistern above the mean level of the sea is 159 feet, being $5^{ft.}$ $2^{in.}$ above Mr. Lloyd's reference mark in Bradley's Transit room adjoining the present Transit-circle room. (*Philosophical Transactions*, 1831.)

The barometer is read at 9^h, 12^h (noon), 15^h, 21^h (civil reckoning) every day. Each reading is corrected by application of the index-correction above mentioned, and reduced to the temperature 32° by means of Table II. of the "Report of the Committee of Physics" of the Royal Society. The readings thus found are used to determine the value of the instrumental base line on the photographic record.

PHOTOGRAPHIC BAROMETER.—The barometric record is made on the same cylinder as is used for magnetic vertical force. A siphon barometer fixed to the northern wall of the Magnet Basement is employed, the bore of the upper and lower extremities of the tube being about 1·1 inch, and that of the intermediate portion 0·3 inch. A metallic plunger, floating on the mercury in the shorter arm of the siphon, is partly supported by a counterpoise acting on a light lever, leaving a definite part of its weight to be supported by the mercury. The lever carries at its other end a vertical plate of aluminium, having a small horizontal slit, whose distance from the fulcrum is about eight times that of the point of connexion with the float, and whose vertical movement is therefore about four times that of the ordinary barometric column. The light of a gas lamp, passing through this slit and falling on a cylindrical lens, forms a spot of light on the paper. The barometer can, by screw action, be raised or lowered so as to keep the photographic trace in a convenient part of the sheet. A base line is traced on the sheet, and the record is interrupted at each hour by the clock, and occasionally by the observer, in the same way as for the magnetic registers. The length of the time scale is also the same.

The barometric scale is determined by experimentally comparing the measured movement on the paper with the observed movement of the standard barometer; one inch of barometric movement is thus found = $4^{in}\cdot16$ on the paper. Ordinates measured for the times of observation of the standard barometer, combined with the corrected readings of the standard barometer, give apparent values of the base line, from which mean values for each day are formed; these are written on the sheets and new base lines drawn, from which the hourly ordinates (see page E xxxi) are measured as for the magnetic registers. As the diurnal change of temperature in the Basement is very small, no appreciable differential effect is produced on the photographic register by the expansion of the column of mercury.

DRY AND WET BULB THERMOMETERS.—The Standard dry and wet bulb thermometers and maximum and minimum self-registering thermometers, both dry and wet, are mounted on a revolving frame planned by Sir G. B. Airy. A vertical axis, fixed in the ground, carries the frame, which consists of a horizontal board as base, of a vertical board projecting upwards from it and connected with one edge of the horizontal board, and of two parallel inclined boards (separated about 3 inches) connected at the top with the vertical board and at the bottom with the other edge of the horizontal board: the outer inclined board is covered with zinc, and the air passes freely between all the boards. The dry and wet bulb thermometers are mounted near the centre of the vertical board, with their bulbs about 4 feet from the ground; the maximum and minimum thermometers for air temperature are placed towards one side of the vertical board, and those for evaporation temperature towards the other side, with their bulbs at about the same level as those of the dry and wet bulb thermometers. A small roof projecting from the frame protects the thermometers from rain. The frame is turned in azimuth several times during the day (whether cloudy or clear), so as to keep the inclined side always towards the sun. In 1878 September a circular board, 3 feet in diameter, was fixed, below the frame, round the supporting post, at a height of 2 feet 6 inches above the ground, with the object of protecting the thermometers from radiation from the ground. In the summer of 1886 experiments were made on days of extreme heat, with the view of determining the effect of the circular board in this respect, an account of which will be found at the end of the Introduction to the volume for the year 1887. The effect of radiation with the circular board removed was found to be insensible.

On 1899 January 4 the thermometer stand was moved to the Magnetic Pavilion enclosure, where the thermometers are set up in an open position, about 40 feet south-west of the building.

The corrections to be applied to the thermometers in ordinary use are determined, usually once each year for the whole extent of scale actually employed, by observations at 32° in pounded ice and by comparison with the standard thermometer No. 515, kindly supplied to the Royal Observatory by the Kew Committee of the Royal Society.

The dry bulb thermometer used throughout the year was Negretti and Zambra, No. 45354. The correction $-0°\cdot4$ has been applied to the readings of this thermometer. The wet bulb thermometer used throughout the year was Negretti and Zambra, No. 94737. The correction $-0^{\circ}\cdot2$ has been applied to the readings of this thermometer.

The self-registering thermometers for temperature of air and evaporation are all by Negretti and Zambra. The maximum thermometers are on Negretti and Zambra's principle, the minimum thermometers are of Rutherford's construction. The readings of Negretti and Zambra, No. 83760, for maximum temperature of the air, required no correction; to those of Negretti and Zambra, No. 38338, for minimum temperature of the air, a correction of $+0^{\circ}\cdot1$ has been applied; to those of Negretti and Zambra, No. 102104, for maximum temperature of evaporation, a correction of $+0^{\circ}\cdot1$ has been applied; and to those of Negretti and Zambra, No. 98508, for minimum temperature of evaporation, a correction of $+0^{\circ}\cdot1$ has been applied.

The dry and wet bulb thermometers are read at 9^{h}, 12^{h} (noon), 15^{h}, 21^{h} (civil reckoning) every day. Readings of the maximum and minimum thermometers are taken at 9^{h}, 15^{h} and 21^{h} every day. Those of the dry and wet bulb thermometers are employed to correct the indications of the photographic dry and wet bulb thermometers.

In the year 1887, four thermometers—a dry-bulb and a wet-bulb, with maximum and minimum thermometers for air temperature—were mounted in a Stevenson screen, with double louvre-boarded sides, of the pattern adopted by the Royal Meteorological Society, which is fully described in the *Quarterly Journal* of the Society, vol. x. page 92. The screen is planted in the Magnet ground 20 feet east-north-east of the photographic thermometers, and its internal dimensions are, length 18 inches, width 11 inches, and height 15 inches, the bulbs of the thermometers placed in it being at a height of about 4 feet above the ground. The dry-bulb thermometer is Hicks No. 262495, to the readings of which a correction of $-0^{\circ}\cdot1$ has been applied. The wet-bulb is Hicks No. 268525, and the maximum thermometer is Negretti and Zambra, No. 85059, neither of which required correction. To the readings of the minimum thermometer, Negretti and Zambra, No. 68873, a correction of $+0^{\circ}\cdot1$ has been applied.

Experiments were made in the summer of the year 1887 on days of extreme heat, to determine whether, with the door of the screen open, the thermometers were in any way influenced by radiation from external objects, an account of which will be found at the end of the Introduction to the volume for 1887. The effect of radiation with the door of the screen open was found to be insensible.

On 1900 March 31, an additional Stevenson screen, similar to the screen already mounted in the Magnet ground, was erected in the Magnetic Pavilion enclosure, 15 feet north-east of the open stand. The dry and wet-bulb thermometers mounted in this screen are Negretti and Zambra, Nos. 94713 and 94714, of which the former required no correction to its readings. To the readings of the maximum thermometer, Negretti and Zambra, No. 94859, a correction of $-0^{\circ}\cdot 4$ has been applied, and to those of the minimum thermometer and the wet-bulb thermometer, Negretti and Zambra, Nos. 85080 and 94714, a correction of $+0^{\circ}\cdot 1$ has been applied.

PHOTOGRAPHIC DRY-BULB AND WET-BULB THERMOMETERS.—The apparatus which has been in use since 1887 was designed by Sir W. H. M. Christie, and since 1899 has stood in its present position in the Magnet Ground. It is placed in a shed, 8 feet square, standing upon posts about 8 feet high, and open to the north. The roof slopes towards the south, and there are double protecting boards on the eastern, southern, and western sides; the apparatus is thus screened from the direct rays of the sun, without impeding the circulation of the air. The cylinder which receives the photographic register is $11\frac{1}{2}$ inches long, and $14\frac{1}{2}$ inches in circumference, and revolves once in 26 hours. The two traces fall on the same part of the cylinder, as regards time scale; a long air-bubble in the wet-bulb thermometer column gives the means of registering the indications of the wet bulb (as well as of such degrees and decades of its scale as fall within the bubble), just below the trace of the dry-bulb thermometer, without any interference of the two records, an arrangement which admits of the time scale being made equal to that of all the other registers. The stems of the thermometers are placed close together, each being covered by a vertical metal plate having a fine vertical slit, so that light passes through only at such parts of the bore of the tube as do not contain mercury. Two gas lamps, each at a distance of 21 inches, are placed at such an angle that the light from each, after passing through its corresponding slit and thermometer tube, falls on the photographic paper in one and the same vertical line. Degree lines etched upon the thermometer stems, and painted, interrupt the light sufficiently to produce a clear and sharp indication on the photographic sheet, the line at each tenth degree being thicker than the others, as well as those at 32°, 52°, 72°, &c. The length of scale is from 0° to 120° for each thermometer, the length of 1° being about 0·1 inch, and the air-bubble in the wet-bulb thermometer is about 12° in length, so that it will always include one of the ten-degree lines. The bulbs, which are 2 inches long and of about $\frac{1}{2}$ an inch in internal bore, are separated horizontally by 5 inches, the tubes of the thermometers having a double bend above the bulbs, which are placed about 4 feet above the ground. The thermometers are carried by a vertical frame with independent vertical adjustment for each thermometer, so that the register in summer or winter can be brought to a convenient part of the photographic sheet. The revolving cylinder is driven by a pendulum clock contained within the brass case covering the whole apparatus, excepting the thermometer bulbs which project below. It makes one revolution in 26 hours, and the time scale is the same as that for all the other registers. As the cylinder revolves, the light passing through the portion of the thermometer tubes not occupied by mercury imprints on the paper a broad band of photographic trace, corresponding to the dry-bulb register, whose breadth in the vertical direction varies with the height of the mercury in the tube, and a narrower band below, corresponding to the wet bulb. When these are developed, the traces are seen to be crossed by thin white lines, the horizontal lines corresponding to degrees, and the vertical lines to hours, the lower boundary of each trace indicating the thermometric record corresponding to the upper surface of the thermometric column.

The driving clock is made to interrupt the light for a short time at each hour, producing on the sheet the hour lines above mentioned; the observer also occasionally interrupts the register for a short time for proper identification of the hourly breaks.

The bulbs of the thermometers were at first completely protected from radiation by vertical or inclined boards fixed to the thermometer stand, two on the south side, two on the north side, one at the east end, one at the west end, and one below, but with proper spaces for free circulation of air. Experiments made in the summer of the year 1886, an account of which is given at the end of the Introduction for 1887, showed that the north and south boards were unnecessary, and the two south boards and one north board were in consequence removed before commencing regular work with the instrument at the beginning of the year 1887. The south boards were replaced during 1908 as a precaution against indirect effects from the gravel path to the south of the shed.

For a description of the apparatus formerly employed, reference may be made to the Introduction for 1887 and previous years. A comparison of the results given by the old and new apparatus will be found at the end of the Introduction to the year 1887.

RADIATION THERMOMETERS.—These thermometers are placed in the Magnetic Pavilion enclosure, in an open position about 50 feet south-west of the building. The thermometer for solar radiation is a self-registering mercurial maximum thermometer on Negretti and Zambra's principle, with its bulb blackened, and the thermometer enclosed in a glass sphere from which the air has been exhausted. The thermometer employed throughout the year was Negretti and Zambra, No. 99989. The thermometer for radiation to the sky, a self-registering spirit minimum thermometer of Rutherford's construction, by Horne and Thornthwaite, No. 3120, was broken on March 14, and replaced by Negretti and Zambra, No. 137640. The thermometers are laid on short grass and freely exposed to the sky ; they require no correction for index-error.

EARTH THERMOMETERS.—These thermometers were made by Adie, of Edinburgh, under the superintendence of Professor J. D. Forbes. They are placed about 20 feet south of the Magnet House.

The thermometers are four in number, placed in one hole in the ground, the diameter of which in its upper half is 1 foot and in its lower half about 6 inches, each thermometer being attached in its whole length to a slender piece of wood. The thermometer No. 1 was dropped into the hole to such a depth that the centre of its bulb was 24 French feet (25·6 English feet) below the surface ; then dry sand was poured in till the hole was filled to nearly half its height. Then No. 2 was dropped in till the centre of its bulb was 12 French feet below the surface; Nos. 3 and 4 till the centres of their bulbs were respectively 6 and 3 French feet below the surface; and the hole was then completely filled with dry sand. The upper parts of the tubes carrying the scales were left projecting above the surface; No. 1 by 27·5 inches, No. 2 by 28·0 inches, No. 3 by 30·0 inches, and No. 4 by 32·0 inches. Of these lengths, 8·5, 10·0, 11·0, and 14·5 inches respectively are in each case tube with narrow bore. The length of 1° on the scales is 1·9 inch, 1·1 inch, 0·9 inch, and 0·5 inch in each case respectively. The ranges of the scales are for No. 1, 46°·0 to 55°·5; No. 2, 43°·0 to 58°·0; No. 3, 44°·0 to 62°·0; and for No. 4, 36°·9 to 68°·0.

The bulbs of the thermometers are cylindrical, 10 or 12 inches long, and 2 or 3 inches in diameter. The bore of the principal part of each tube, from the bulb to the graduated scale, is very small; in that part to which the scale is attached it is larger; the fluid in the tubes is alcohol tinged red; the scales are of opal glass.

The ranges of scale having in previous years been found insufficient, fluid has at times been removed from or added to the thermometers as necessary, corresponding alterations being made in the positions of the attached scales. Information in regard to these changes will be found in previous Introductions.

The parts of the tubes above the ground are protected by a small wooden hut fixed to the ground; the sides of the hut are perforated with numerous holes, and it has a double roof; in the north face is a plate of glass, through which the readings are taken. Within the hut are two small thermometers—one, No. 5, with bulb 1 inch in the ground; another, No. 6, whose bulb is freely exposed in the centre of the hut.

These thermometers are read every Monday and No. 4 every day at noon. The index-errors of Nos. 1, 2, 3, and 4 are unknown; No. 6 appears to read too high by $0^{\circ}\cdot4$, but no corrections have been applied. The readings of No. 4 are given without correction in the daily results.

OSLER'S ANEMOMETER.—This self-registering anemometer, devised by A. Follett Osler, for continuous registration of the direction and pressure of the wind and of the amount of rain, is fixed above the north-western turret of the ancient part of the observatory. For the direction of the wind a large vane ($9^{\text{ft.}}\ 2^{\text{in.}}$ in length), from which a vertical shaft proceeds down to the registering table within the turret, gives motion, by a pinion fixed at its lower end, to a rack-work carrying a pencil. A collar on the vane shaft bears upon anti-friction rollers running in a cup of oil, rendering the vane very sensitive to changes of direction in light winds. The pencil marks a paper fixed to a board moved horizontally and uniformly by a clock, in a direction transverse to that of the motion of the pencil. The paper carries lines corresponding to the positions of N., E., S., and W. of the vane, with transversal hour lines. The vane is 25 feet above the roof of the Octagon Room, 60 feet above the adjacent ground, and 215 feet above the mean level of the sea. A fixed mark on the north-eastern turret, in a known azimuth, as determined by celestial observation, is used for examining at any time the position of the direction plate over the registering table, to which reference is made by means of a direction pointer when adjusting a new sheet on the travelling board. The vane, which had been in use since the year 1841, began in the autumn of 1891 to show signs of weakness; it was taken down in December 1891 and thoroughly repaired. It was satisfactory to find that the anti-friction bearings of the vane, on which the sensitiveness of its motion depends, were in excellent condition, after having been continuously in action for 25 years.

For the pressure of the wind the construction is as follows:—At a distance of 2 feet below the vane there is placed a circular pressure plate (with its plane vertical) having an area of $1\frac{1}{3}$ square feet, or 192 square inches, which, moving with the vane in azimuth, and being thereby kept directed towards the wind, acts against a combination of springs in such way that, with a light wind, slender springs are first brought into action, but, as the wind increases, stiffer springs come into play. For a detailed account of the arrangement adopted, the reader is referred to the Introduction for the year 1866. [Until 1866 the pressure plate was a square plate, 1 foot square, for which in that year a circular plate, having an area of 2 square feet, was substituted and employed until the spring of the year 1880, when the present circular plate, having an area of $1\frac{1}{3}$ square feet, was introduced.] A short flexible snake chain, fixed to a cross bar in connexion with the pressure plate, and passing over a pulley in the upper part of the shaft, is attached to a brass chain (formerly a copper wire) running down the centre of the shaft to the registering table, just before reaching which the chain communicates with a short length of silk cord, which, led round a pulley, gives horizontal motion to the arm carrying the pressure pencil. The substitution, in the year 1882, of the flexible brass chain for the copper wire, has greatly increased the delicacy of movement of the pressure pencil, every small movement of the pressure plate being now registered. The scale for pressure, in lbs. on the square foot, is experimentally determined from time to time as appears necessary; the pressure pencil is brought to zero by a light spiral spring. During the year 1907 a new set of pressure springs was supplied by Messrs. Simms. Advantage was taken of this opportunity to endeavour to simplify the determination of mean pressures by arranging that the scale should change only once, low pressures being represented on twice as large a scale as high ones, and adjusting screws and clamps were also introduced by which the strength could be varied so that the springs could be adjusted to scale, instead of a new scale being determined from time to time.

Whilst the action of the pressure apparatus has been satisfactory for moderate winds, it is believed that the record of occasional very large pressures in years preceding 1882 was due principally to irregular action, in excessive gusts, of the connecting copper wire, but the brass chain being always in tension, the movements of the recording pencil have since been in complete sympathy with those of the pressure plate, and in this condition of the apparatus—that is, since the year 1882—few pressures greater than 30 lbs. have been recorded.

A self-registering rain gauge of peculiar construction forms part of the apparatus: this is described under the heading "Rain Gauges."

A new sheet of paper is applied to the instrument every day at noon. The scale of time is ordinarily the same as that of the magnetic registers, but by means of a special gearing applied to the clock by Mr. Kullberg in 1894 the table carrying the record can either be driven at the usual rate, or 24 times as fast, in order to give a largely increased time scale for the register of wind pressure during gales, the ordinary sheet thus giving a register for 1 hour instead of 24.

ROBINSON'S ANEMOMETER.—This instrument, made by Mr. Browning, is constructed on the principle described by Dr. Robinson in the *Transactions of the Royal Irish Academy*, vol. xxii., for registration of the horizontal movement of the air, and is mounted above the small building on the roof of the Octagon Room. It was brought into use in 1866 October. The motion is given by the pressure of the wind on four hemispherical cups, each 5 inches in diameter, the centre of each cup being 15 inches distant from the vertical axis of rotation. The foot of the axis is a hollow flat cone bearing upon a sharp cone, which rises up from the base of a cup of oil. An endless screw acts on a train of wheels furnished with indices for reading off the amount of motion of the air in miles, and a pinion on the axis of one of the wheels draws upwards a rack, to which is attached a rod passing down to the pencil which marks the paper placed on the vertical revolving cylinder in the chamber below. A motion of the pencil upwards through a space of 1 inch represents horizontal motion of the air through 100 miles. The revolving hemispherical cups are 21 feet above the roof of the Octagon Room, 56 feet above the adjacent ground, and 211 feet above the mean level of the sea.

The cylinder is driven by a clock in the usual way, and makes one revolution in 24 hours. A new sheet of paper is applied every day at noon. The scale of time is the same as that of the magnetic registers.

In preceding volumes the values of wind velocity V given in the tables are three times the actual velocity v of the cups. From some tests of the Browning instrument, made by Mr. W. H. Dines at Hersham in 1889, on his whirling machine, it appears that the relation between V and v is more correctly given by

$$V = 4{\cdot}0 + 2{\cdot}0\ v.$$

The instrument thus fails to record wind velocities less than 4 miles per hour; and values of the wind velocity given by the formula $V = 3\ v$ are too high when V exceeds 12. Since the two formulæ agree, however, for $V = 12$, the mean values of the wind velocity (which seldom differ much from 12) will be approximately correct in either case; therefore, for the sake of continuity and simplicity, the formula $V = 3\ v$ will continue to be used. In this volume, however, the greatest hourly measures (p. E 76) are given according to both formulæ, and the least hourly measures omitted.

The experiments by Mr. W. H. Dines, above referred to, are described in the Introduction to the volume for 1889.

RAIN GAUGES.—During the year 1911 eight rain gauges were employed, placed at different elevations above the ground, complete information in regard to which will be found at page (E 68) of the Meteorological Section.

The gauge No. 1 forms part of the Osler Anemometer apparatus, and is self-registering, the record being made on the sheet on which the direction and pressure of the wind are recorded. The receiving surface is a rectangular opening

10×20 inches (200 square inches in area). The collected water passes into a vessel suspended by spiral springs, which lengthen as the water accumulates, until 0·25 inch is collected. The water then discharges itself by means of the following modification of the siphon. A vertical copper tube, open at both ends, is fixed in the receiver, with one end just projecting below the bottom. Over this tube a larger tube, closed at the top, is loosely placed. The accumulating water, having risen to the top of the inner tube, begins to flow off into a small tumbling bucket, fixed in a globe placed underneath, and carried by the receiver. When full, the bucket falls over, throwing the water into a small exit pipe at the lower part of the globe—the only outlet. This creates a partial vacuum in the globe sufficient to cause the longer leg of the siphon to act, and the whole remaining contents of the receiver then run off, through the globe, to a waste pipe. The spiral springs at the same time shorten, and raise the receiver. The gradual descent of the water vessel as the rain falls, and the immediate ascent on discharge of the water, act upon a pencil, and cause a corresponding trace to be made on the paper fixed to the moving board of the anemometer. The rain scale on the paper was determined experimentally by passing a known quantity of water through the receiver. The continuous record thus gives information on the rate of the fall of rain, but the record is liable to interruption when the staging is erected for experiments with the Osler Anemometer.

Gauge No. 2 is a ten-inch circular gauge, placed close to gauge No. 1, its receiving surface being precisely at the same level. The gauge is read daily at 9^h Greenwich civil time. This is also liable to interference, just as No. 1.

Gauges Nos. 3, 4, and 5 are 8-inch circular gauges, placed respectively on the roof of the Octagon Room, over the roof of the Magnetic Observatory, and on the roof of the Photographic Thermometer Shed. All are read daily at 9^h Greenwich civil time.

Gauge No. 6 is an 8-inch circular gauge placed with the receiving surface 5 inches above the ground in the Magnetic Pavilion enclosure, about 10 feet north-west of the thermometer stand, and gauge No. 7, also an 8-inch circular gauge, is similarly placed in the ground south-east of the Magnetic Observatory. No. 8 is a new gauge of the same diameter, but of the modified Snowdon pattern adopted by the Meteorological Office, having its receiving surface 1 foot above the ground. It was brought into use 1908 January 1, being fixed SW by W from No. 6 with a clear space of 6 feet between the rims. No. 6 is the Standard gauge, Nos. 7 and 8 are used as checks on the readings of No. 6. No. 6 is read daily, usually at 9^h, 15^h, and 21^h Greenwich civil time, and Nos. 7 and 8 at 9^h only as a rule.

The height of the Standard gauge above mean sea-level was determined by

Mr. H. A. H. Christie on 1908 February 26, and was found to be 5 feet 9 inches less than in its old position in the Observatory Grounds, before removal to the Pavilion Enclosure.

The gauges are also read at midnight on the last day of each calendar month.

Electrometer.—The electric potential of the atmosphere is measured by means of a Thomson self-recording quadrant electrometer, made by White, of Glasgow. It is situated in the Upper Magnet Room, in connection with Lord Kelvin's water-dropping apparatus, and with the usual arrangements for photographic registration. The time scale is the same as for the magnetic registers, the hourly break of trace being made by the driving-clock itself.

Sunshine Recorder.—The Campbell-Stokes instrument, which has been in use since 1887, records the duration of bright sunshine by the length of blackened trace produced by the concentration of the sun's rays on a card. A spherical glass globe brings the rays to a focus. The recording cards are supported by carriers no larger than is required for keeping them in proper position; one straight card serves for the equinoctial periods of the year, and another, curved, for the solstitial periods, the only difference between the summer and winter cards being that the summer cards are the longer: grooves are provided so that the cards are placed in position with great readiness. The daily record is transferred to a sheet of paper specially ruled with equal vertical spaces to represent hours, each sheet containing the record for one calendar month. The daily sums, and sums for each hour (reckoning from *apparent* midnight) through the month, are thus readily formed. The recorded durations are to be understood as indicating the amount of *bright* sunshine, no register being obtained when the sun shines faintly through fog or cloud, or when the sun is very near the horizon. Until 1896 February 5 the instrument was placed on a table upon the platform above the Magnetic Observatory, about 21 feet above the ground, and 176 feet above mean sea level. On account of the extension of the buildings in the south ground, it was found necessary on 1896 February 6 to remove the sunshine recorder from the roof of the Magnetic Observatory to a commanding position on the stage carrying the Robinson anemometer, on the roof of the Octagon Room, about 50 feet above the ground. A clear view of the sun is obtained in this position from sunrise to sunset, but some inconvenience is caused by the smoke from neighbouring chimneys. Very little record is obtained near to sunrise at any part of the year.

It was pointed out by Mr. Marriott, Secretary of the Royal Meteorological Society, towards the end of 1896, that the record by the Campbell-Stokes instrument exhibited a notable falling off. This, though not very marked till 1896, had certainly begun in

1894, and it was found to be due to opacity in the glass globe, which appears to have deteriorated. On 1897 January 1 a globe of clearer glass, presented to the Royal Observatory in 1881 by the late Mr. Campbell, was substituted for the defective globe.

The deterioration of the old ball is fully discussed by Mr. Curtis in the *Quarterly Journal of the Royal Meteorological Society*, vol. xxiv.

§ 7. *Meteorological Reductions.*

The results given in the Meteorological Section refer to the civil day, commencing at midnight.

All results in regard to atmospheric pressure, temperature of the air and of evaporation with deductions therefrom, and atmospheric electricity, are derived from the photographic records, excepting that the maximum and minimum values of air temperature are those given by eye observation of the ordinary maximum and minimum thermometers at 9^h, 15^h, and 21^h (civil reckoning), reference being made, however, to the photographic register when necessary to obtain the values corresponding to the civil day from midnight to midnight. The hourly readings of the photographic traces for the elements mentioned are entered into a form having double argument, the horizontal argument ranging through the 24 hours of the civil day (0^h to 23^h), and the vertical argument through the days of a calendar month. Then for all the photographic elements, the means of the numbers standing in the vertical columns of the monthly forms, into which the values are entered, give the mean monthly photographic values for each hour of the day, the means of the numbers in the horizontal columns giving the mean daily value. It should be mentioned that before measuring out the electrometer ordinates, a pencil line was first drawn through the trace to represent the general form of the curve, in the way described for the magnetic registers (page E xiii), excepting that no day has been omitted on account of unusual electrical disturbance, as it has been found difficult to decide on any limit of disturbance beyond which it would seem proper, as regards determination of diurnal inequality, to reject the results. In measuring the electrometer ordinates a scale of inches is used, and the values given in the tables which follow are expressed in thousandths of an inch, positive and negative potential being denoted by positive and negative numbers respectively. The scale has not been determined in terms of any electrical unit.

To correct the photographic indications of barometer and dry and wet bulb thermometers for small instrumental error, the means of the photographic readings at 9^h,

12^h (noon), 15^h, and 21^h in each month are compared with the corresponding corrected mean readings of the standard barometer and standard dry and wet bulb thermometers, as given by eye observation. A correction applicable to the photographic reading at each of these hours is thus obtained, and, by interpolation, corrections for the intermediate hours are found. The mean of the twenty-four hourly corrections in each month is adopted as the correction applicable to each mean daily value in the month. Thus mean hourly and mean daily values of the several elements are obtained for each month. The process of correction is equivalent to giving photographic indications in terms of corrected standard barometer, and in terms of the standard dry and wet bulb thermometers exposed on the free stand. The barometer results are *not* reduced to sea level, neither are they corrected for the effect of gravity, by reduction to the latitude of 45°.

The mean daily temperature of the dew-point and degree of humidity are deduced from the mean daily temperatures of the air and of evaporation by use of Glaisher's *Hygrometrical Tables.* The table of factors for this purpose may be found in the Introductions for 1910 and previous years.

In the same way the mean hourly values of the dew-point temperature and degree of humidity in each month (pages E 63 and E 64) have been calculated from the corresponding mean hourly values of air and evaporation temperatures (pages E 62 and E 63).

The excess of the mean temperature of the air on each day above the average of 65 years, given in the "Daily Results of the Meteorological Observations," is found by comparing the numbers contained in column 6 with a table of average daily temperatures found by smoothing the accidental irregularities of the daily means deduced from the observations for the sixty-five years 1841–1905. In this series the mean daily temperature from 1841 to 1847 depends usually on 12 observations daily, in 1848 on 6 observations daily, and from 1849 to 1905 on 24 hourly readings from the photographic record. The smoothed numbers are given in Table VII., *Reduction of the Greenwich Meteorological Observations,* Part IV., and also in the Introduction for 1910.

The daily register of rain contained in column 16 is that recorded by the gauge No. 6, whose receiving surface is 5 inches above the ground. This gauge is usually read at 9^h, 15^h, and 21^h Greenwich civil time. The continuous record of Osler's self-registering gauge shows whether the amounts measured at 9^h are to be placed to the same, or to the preceding civil day ; and in cases in which rain fell both before and after midnight, also gives the means of ascertaining the proper proportion of the 9^h amount which should be placed to each civil day. The number of days of rain given in the foot-notes, and in the abstract tables, pages E 61 and E 68, is formed from the records of this gauge. In this numeration only those days are counted on which the fall amounted to or exceeded $0^{in.}005$.

The indications of atmospheric electricity are derived from Thomson's Electrometer.

No particular explanation of the anemometric results seems necessary. It may be understood generally that the greatest pressures usually occur in gusts of short duration. The "Mean of 24 Hourly Measures" was in former years the mean of 24 measures of pressure taken *at* each hour, but commencing with 1887 January 1, it is the mean of measures, each one of which is the average pressure during the hour of which the nominal hour is the middle point.

The mean amount of cloud given in the footnotes on the right-hand pages E 37 to E 59, and in the abstract table, page E 61, is the mean found from observations made usually at 9^h, 12^h (noon), 15^h, and 21^h of each civil day.

For understanding the divisions of time under the headings, "Clouds and Weather" and "Electricity," the following remarks are necessary:—In regard to Clouds and Weather, the day is divided by columns into two parts (from midnight to noon, and from noon to midnight), and each of these parts is subdivided into two or three parts by colons (:). Thus, when there is a single colon in the first column, it denotes that the indications before it apply (roughly) to the interval from midnight to 6^h, and those following it to the interval from 6^h to noon. When there are two colons in the first column, it is to be understood that the twelve hours are divided into three nearly equal parts of four hours each. And similarly for the second column. In regard to Electricity, the results are included in one column; in this case the colons divide the whole period of 24 hours (midnight to midnight).

The notation employed for Clouds and Weather is as follows, it being understood that for clouds Howard's Nomenclature is used. The figure denotes the proportion of sky covered by cloud, an overcast sky being represented by 10.

a denotes *aurora borealis*
ci ... *cirrus*
ci-cu ... *cirro-cumulus*
ci-s ... *cirro-stratus*
cu ... *cumulus*
cu-s ... *cumulo-stratus*
d ... *dew*
hy-d ... *heavy dew*
f ... *fog*
slt-f ... *slight fog*
tk-f ... *thick fog*
fr ... *frost*
ho-fr ... *hoar frost*
g ... *gale*
hy-g ... *heavy gale*
glm ... *gloom*
gt-glm ... *great gloom*
h ... *haze*
slt-h ... *slight haze*
hl ... *hail*
l ... *lightning*
li-cl ... *light clouds*
lu-co ... *lunar corona*
lu-ha ... *lunar halo*
m ... *mist*
slt-m ... *slight mist*
n ... *nimbus*
p-cl ... *partially cloudy*
prh ... *parhelion*
prs ... *paraselene*
r ... *rain*
c-r ... *continued rain*
fr-r ... *frozen rain*
fq-r ... *frequent rain*
hy-r ... *heavy rain*
c-hy-r ... *continued heavy rain*
m-r ... *misty rain*
fq-m-r ... *frequent misty rain*
oc-m-r denotes *occasional misty rain*
oc-r ... *occasional rain*
sh-r ... *shower of rain*
shs-r ... *showers of rain*
slt-r ... *slight rain*
oc-slt-r ... *occasional slight rain*
th-r ... *thin rain*
fq-th-r ... *frequent thin rain*
oc-th-r ... *occasional thin rain*
hy-sh ... *heavy shower*
slt-sh ... *slight shower*
fq-shs ... *frequent showers*
hy-shs ... *heavy showers*
fq-hy-shs ... *frequent heavy showers*
oc-hy-shs ... *occasional heavy showers*
li-shs ... *light showers*
oc-shs ... *occasional showers*
s ... *stratus*
sc ... *scud*
li-sc ... *light scud*
sl ... *sleet*
sn ... *snow*
oc-sn ... *occasional snow*
slt-sn ... *slight snow*
so-ha ... *solar halo*
sq ... *squall*
sqs ... *squalls*
fq-sqs ... *frequent squalls*
hy-sqs ... *heavy squalls*
fq-hy-sqs ... *frequent heavy squalls*
oc-sqs ... *occasional squalls*
t ... *thunder*
t-sm ... *thunder storm*
th-cl ... *thin clouds*
v ... *variable*
vv ... *very variable*
w ... *wind*
st-w ... *strong wind*

The following is the notation employed for Electricity:—

N	denotes *negative*	w	denotes *weak*
P	... *positive*	s	... *strong*
m	... *moderate*	v	... *variable*

The duplication of the letter denotes intensity of the modification described—thus, ss is very strong; vv, very variable. 0 indicates zero potential, and a dash, "—," accidental failure of the apparatus.

The remaining columns in the tables of "Daily Results" seem to require no special remark; all necessary explanation regarding the results therein contained will be found in the notes at the foot of the left-hand page, or in the descriptions of the several instruments given in § 6.

In regard to the comparisons of the extremes and means, &c. of meteorological elements with average values, contained in the footnotes, it may be mentioned that comparison is in all cases made with mean values determined from the observations for the sixty-five years 1841–1905.

The tables following the "Daily Results" require no lengthened explanation. They consist of tables giving the highest and lowest readings of the barometer through the year; monthly abstracts of the principal meteorological elements; hourly values in each month of barometer-reading, of temperature of air, evaporation, and dew-point, and of degree of humidity; sunshine results; rain results; observations of thermometers on the revolving stand, with mean differences from corresponding readings in a Stevenson screen in the Magnetic Pavilion Enclosure; changes of direction of the wind; hourly values in each month of the horizontal movement of the air derived from Robinson's Anemometer; results derived from the Thomson Electrometer; and observations of parhelia, paraselenæ, and meteors.

In the tables of mean values of meteorological elements at each hour for the different months of the year, the mean values have, in previous years, been given for the hours 0^h to 23^h only. But since 1886 the mean for the 24th hour (the following midnight) has been added, thus indicating the amount of non-periodic variation. The monthly means have also been given since 1886 for the 24 hours, 1^h to 24^h, as well as for the hours, 0^h (midnight) to 23^h, which were given in former years.

It may be pointed out that the monthly means, 0^h to 23^h, for barometer and temperature of the air and of evaporation contained in these tables, pages E 62 and E 63, do not in some cases agree with the monthly means given in the daily results pages E 36 to E 58, and in the table on page E 61, in consequence of occasional interruption of the photographic register, at which times daily values to complete the daily results could be supplied from the eye observations, as mentioned in the footnotes; but hourly values, for the diurnal inequality tables, could not be so supplied. In such cases, however, the means given with these tables are the proper means to be used in connexion with the numbers standing immediately above them, for formation of the actual diurnal inequality.

The table, "Abstract of the Changes of the Direction of the Wind," as derived from Osler's Anemometer, page E 69, exhibits every change of direction of the wind occurring throughout the year, whenever such change amounted to two nautical points or $22\frac{1}{2}°$. It is to be understood that the change from one direction to another during the interval between the times mentioned in each line of the table was generally gradual. All complete turnings of the vane which were evidently of accidental nature, and which in the year 1881 and in previous years had been included, are here omitted. Between any time given in the second column and that next following in the first column, no change of direction in general occurred varying from that given by so much as one point or $11\frac{1}{4}°$. From the numbers given in this table the monthly and yearly excess of motion, page E 75, is formed. By direct motion it is to be understood that the change of direction occurred in the order N, E, S, W, N, &c., and by retrograde motion that the change occurred in the order N, W, S, E, N, &c.

In regard to Electric Potential of the Atmosphere, in addition to giving the hourly values in each month, including all available days, the days in each month have been (since the year 1882) further divided into two groups, one containing all days on which the rainfall amounted to or exceeded $0^{in}\cdot020$, the other including only days on which no rainfall was recorded, the values of daily rainfall given in column 16 of the "Daily Results of the Meteorological Observations" being adopted in selecting the days. These additional tables are given on pages E 79 and E 80 respectively.

In regard to the observations of Luminous Meteors, it is simply necessary to say that, in general, only special meteor showers are watched for, such as those of April, August, and November. The observers of meteors in the year 1911 were Mr. Bryant, Mr. Edney, Mr. Kirby, Mr. Timbury, Mr. Divers, and Mr. Brown. Their observations are distinguished by the initials B., E., K., T., D., and F.B. respectively. A few observations made by Mr. Smith, Mr. Leary, and Mr. Jeffries are distinguished by the initials S., L., and J. respectively.

F. W. DYSON.

ROYAL OBSERVATORY, GREENWICH,
1912 *October* 31.

ROYAL OBSERVATORY, GREENWICH.

RESULTS

OF

MAGNETICAL OBSERVATIONS

(EXCLUDING DAYS OF GREAT MAGNETIC DISTURBANCE),

1911.

TABLE I.—MEAN MAGNETIC DECLINATION WEST FOR EACH CIVIL DAY.

(Each result is the mean of 24 hourly ordinates from the photographic register.)

1911.

Day of Month.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
	15°	15°	15°	15°	15°	15°	15°	15°	15°	15°	15°	15°
d	′	′	′	′	′	′	′	′	′	′	′	′
1	36·1	35·8	35·0	34·8	34·5	31·3	33·4	32·8	31·4	32·2	30·8	29·3
2	36·3	36·1	35·5	34·7	35·7	32·2	32·9	32·3	31·4	33·1	30·7	29·1
3	35·1	36·1	35·6	34·9	35·3	31·4	33·4	32·7	31·6	31·8	29·7	28·9
4	36·3	36·4	35·3	34·6	35·2	...	32·4	32·8	31·8	32·1	29·2	29·4
5	35·5	35·9	35·8	35·3	34·6	...	32·8	32·2	31·7	32·3	29·7	29·5
6	35·7	36·5	35·5	35·0	34·2	31·8	33·1	31·4	31·9	32·4	29·8	29·8
7	37·0	36·6	35·0	34·7	35·3	32·8	32·9	31·4	31·6	32·7	30·3	29·3
8	35·4	36·3	36·1	36·1	34·5	32·8	32·5	31·9	32·1	32·0	29·8	29·2
9	35·4	36·5	35·4	39·2	34·6	32·7	31·6	32·9	31·8	32·2	29·4	29·1
10	37·4	36·7	35·4	34·0	34·0	34·0	32·6	32·5	32·0	30·9	30·2	29·3
11	37·3	36·0	35·0	34·4	33·3	34·2	32·3	32·0	31·8	33·0	30·0	31·1
12	36·5	35·7	35·4	35·5	33·5	33·9	32·1	33·0	32·3	31·5	29·3	28·7
13	36·7	34·3	35·6	35·0	33·6	33·4	33·1	32·1	32·6	31·1	28·5	28·8
14	36·5	35·3	36·3	35·1	33·8	34·1	33·8	32·5	31·7	31·5	29·8	29·2
15	36·5	36·1	36·3	35·0	33·1	34·3	33·3	32·9	32·2	31·1	29·0	29·3
16	36·2	35·9	35·6	34·4	33·5	34·9	33·7	32·8	32·7	31·7	29·1	29·0
17	36·0	35·1	35·6	35·2	34·0	33·6	33·1	32·6	31·2	32·1	29·1	29·1
18	35·8	35·1	35·3	34·6	34·3	34·3	32·9	32·7	31·9	30·8	29·3	28·4
19	36·6	35·4	35·7	34·0	33·1	34·2	33·7	33·0	32·2	31·2	29·4	28·2
20	36·4	35·8	34·1	34·6	34·0	33·9	33·4	31·7	31·6	31·3	29·6	28·1
21	36·2	34·8	34·7	33·5	33·4	34·4	33·2	32·3	32·3	30·4	29·9	28·9
22	36·5	34·3	35·3	34·3	34·2	33·3	33·3	32·0	31·4	29·6	30·6	28·7
23	36·2	34·4	33·2	34·4	33·6	33·7	33·7	33·1	31·3	30·4	30·4	28·6
24	35·1	34·8	34·6	35·0	32·9	33·3	32·8	32·0	31·6	29·6	30·1	29·0
25	34·5	36·2	34·9	34·0	33·2	33·9	33·8	31·9	31·7	29·3	30·3	29·4
26	35·7	35·5	33·5	34·7	33·7	33·0	33·1	32·1	31·8	30·6	29·8	28·8
27	36·0	34·6	35·2	35·2	32·5	33·2	34·0	32·2	31·5	30·8	29·8	28·6
28	35·2	35·0	35·2	34·5	33·2	33·1	32·8	31·8	31·0	30·9	30·1	28·1
29	36·3		35·0	34·3	32·9	32·5	33·4	31·6	31·7	31·2	30·2	28·3
30	35·7		34·8	34·2	32·7	32·8	33·3	31·5	31·6	30·1	29·8	28·5
31	36·0		34·4		33·0		33·5	31·8		30·6		28·2

TABLE II.—MONTHLY MEAN DIURNAL INEQUALITY OF MAGNETIC DECLINATION WEST.

(The results in each month are diminished by the smallest hourly value.)

1911.

Hour, Greenwich Civil Time.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
	′	′	′	′	′	′	′	′	′	′	′	′
Midn.	0·7	0·8	1·1	1·0	2·4	2·1	2·2	2·0	1·6	0·4	0·6	0·4
1h	1·3	1·4	1·1	1·2	2·7	2·5	2·1	2·1	1·6	0·9	1·1	0·6
2	1·8	2·1	1·5	1·3	2·9	2·4	2·2	2·1	1·5	1·3	1·4	0·7
3	2·4	2·4	1·8	1·5	2·7	1·9	2·0	1·7	1·5	1·6	1·6	0·8
4	2·3	2·3	1·8	1·4	2·3	1·7	1·4	1·4	1·5	2·0	1·6	1·0
5	2·3	2·4	1·9	1·5	1·4	0·9	0·6	0·8	1·2	2·0	1·4	1·0
6	2·4	2·4	2·3	1·4	1·0	0·1	0·1	0·2	0·8	1·9	1·3	1·1
7	2·3	2·4	1·9	0·6	0·2	0·0	0·0	0·0	0·2	1·5	1·2	1·0
8	2·4	2·2	0·9	0·0	0·0	0·0	0·1	0·2	0·0	0·5	1·1	1·1
9	2·2	2·0	0·3	0·3	1·1	0·7	1·1	1·2	0·7	0·6	1·4	1·7
10	2·7	2·5	1·0	1·7	3·4	2·3	2·7	3·0	2·3	2·2	2·5	2·5
11	3·7	3·7	3·0	4·2	5·8	4·5	4·7	4·9	4·8	4·2	3·7	3·0
Noon.	4·5	5·4	5·1	6·8	7·8	6·3	6·8	6·9	6·6	5·6	4·2	3·2
13h	5·1	6·0	6·5	7·9	8·4	7·2	8·1	7·8	7·4	6·0	4·4	2·7
14	4·5	5·9	6·6	7·4	7·9	7·7	8·3	7·5	6·6	5·5	3·6	1·8
15	3·5	5·3	5·8	5·9	6·7	7·2	7·4	6·1	5·2	4·3	2·7	1·4
16	2·8	3·9	4·0	4·3	5·7	6·1	6·1	4·4	3·8	3·0	2·4	1·6
17	1·9	2·3	2·3	3·2	4·7	4·9	5·0	3·2	2·8	2·4	1·9	1·1
18	1·2	1·2	1·3	2·1	3·8	4·2	4·1	2·5	2·3	2·0	1·4	0·6
19	0·9	0·7	0·6	1·5	3·3	3·7	3·4	2·5	1·9	1·6	0·6	0·2
20	0·5	0·0	0·3	1·2	3·0	2·9	3·0	2·4	1·4	0·8	0·4	0·0
21	0·0	0·0	0·0	0·8	2·8	2·8	2·8	2·2	1·0	0·3	0·1	0·0
22	0·1	0·2	0·3	0·5	2·8	2·8	2·5	2·0	1·2	0·1	0·0	0·1
23	0·3	0·5	0·8	0·6	2·6	2·2	2·4	2·0	1·5	0·0	0·1	0·2
Means.	2·16	2·42	2·17	2·43	3·56	3·21	3·30	2·88	2·47	2·11	1·70	1·16

TABLE III.—MEAN HORIZONTAL MAGNETIC FORCE (diminished by a Constant) FOR EACH CIVIL DAY.

(Each result is the mean of 24 hourly ordinates from the photographic register, expressed in terms of the whole Horizontal Force, the unit in the table being ·00001 of the whole Horizontal Force. The letters u *and* c *indicate respectively values uncorrected for, and corrected for temperature.)*

1911.

Day of Month.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
	u	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*
d																								
1	340	905	282	775	301	866	320	897	273	862	491	092	541	121	290	019	286	918	235	803	191	768	118	698
2	294	833	272	788	388	970	322	882	318	900	493	092	457	027	326	048	298	953	172	730	195	784	148	735
3	289	833	321	835	417	004	285	845	335	895	548	152	418	990	353	059	285	965	203	761	163	743	176	772
4	274	844	356	898	468	052	223	758	307	875	613	229	438	020	335	025	309	981	213	788	155	771	189	766
5	349	895	315	890	362	930	213	748	253	849	482	112	434	040	342	030	311	978	244	821	213	790	159	751
6	285	862	333	872	285	860	243	732	235	834	403	043	453	076	273	958	269	931	243	823	174	718	147	700
7	317	863	315	845	282	864	240	720	253	781	375	988	451	101	250	943	264	949	247	822	114	694	105	685
8	344	919	299	855	275	850	275	780	280	810	436	028	403	063	262	971	257	953	264	836	135	724	135	677
9	337	912	318	839	237	821	056	591	264	846	482	088	386	038	255	992	247	956	220	800	088	660	169	713
10	305	865	305	826	231	823	131	673	389	957	361	926	392	010	227	978	268	928	147	731	103	663	213	778
11	295	877	287	852	242	822	196	729	382	969	337	895	415	021	236	973	215	872	205	792	103	654	994	540
12	292	857	311	874	235	812	191	726	340	934	348	906	398	026	265	013	169	829	271	855	181	758	021	565
13	289	810	308	854	265	811	174	744	460	056	330	890	327	962	246	005	205	890	363	935	105	649	099	669
14	275	794	208	785	218	781	166	746	540	117	312	858	347	994	194	950	257	899	357	944	095	672	124	692
15	301	820	270	850	228	756	193	789	350	934	279	856	284	931	178	913	317	913	362	951	120	707	139	716
16	260	802	347	910	216	760	152	736	415	985	295	899	409	020	208	906	245	827	335	915	227	797	169	739
17	311	867	360	954	203	751	073	679	375	964	393	997	428	053	219	915	273	857	257	837	197	779	174	770
18	312	875	410	018	221	786	157	749	405	973	496	085	371	003	220	929	263	852	265	847	206	778	163	771
19	299	874	418	995	229	813	205	775	430	986	501	085	328	956	233	957	298	882	290	867	157	713	275	833
20	283	863	344	897	182	750	260	802	334	882	506	081	327	982	262	986	225	836	340	929	139	707	295	839
21	303	878	285	824	159	739	267	813	258	823	441	040	292	969	282	011	207	787	370	952	110	649	215	778
22	290	855	300	865	235	819	223	800	278	858	459	039	232	941	338	052	221	789	325	905	164	678	199	752
23	267	849	314	903	248	837	286	846	367	963	494	074	236	955	320	003	241	818	323	893	162	695	170	733
24	295	848	307	882	182	764	262	830	483	063	495	065	263	966	226	896	270	874	315	899	137	685	189	757
25	262	825	377	942	143	706	278	850	525	117	520	076	285	991	262	929	293	885	270	828	180	717	182	726
26	313	897	282	857	170	700	299	855	513	112	486	034	289	992	278	935	331	932	219	782	145	678	120	662
27	290	877	236	823	142	690	375	919	515	097	475	033	340	043	250	927	341	935	202	777	112	651	105	653
28	314	889	305	892	225	773	371	915	529	101	496	080	317	041	249	932	313	912	171	739	148	701	128	691
29	372	932			198	766	332	867	467	087	467	068	257	002	263	933	299	859	133	705	131	711	142	729
30	316	876			220	792	278	853	453	054	511	091	274	022	265	915	264	844	200	794	127	685	178	758
31	275	810			258	838			446	040			256	988	308	945			253	816			141	709

At the end of the year experiments were made for determination of the angle of torsion, thus breaking the continuity of the values.

TABLE IV.—MEAN TEMPERATURE for each CIVIL DAY within the box inclosing the HORIZONTAL FORCE MAGNET.

1911.

Day of Month.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
d 1	66°·3	63°·2	66°·3	66°·8	67°·3	67°·8	66°·9	72°·9	69°·1	66°·4	66°·8	66°·9
2	65·2	64·2	67·0	66·1	67·0	67·7	66·5	72·6	70·0	66·0	67·3	67·2
3	65·4	64·1	67·2	66·1	66·1	67·9	66·6	72·0	71·0	66·0	66·9	67·6
4	66·5	65·3	67·1	65·0	66·4	68·4	67·0	71·4	70·7	66·7	68·4	66·8
5	65·5	66·7	66·4	65·0	67·6	69·0	68·0	71·3	70·5	66·8	66·8	67·4
6	66·8	65·2	66·7	63·0	67·7	69·4	68·7	71·2	70·3	66·9	65·4	65·8
7	65·5	64·8	67·0	62·6	64·7	68·3	69·8	71·5	71·2	66·7	66·9	66·9
8	66·7	65·9	66·7	63·7	64·8	67·4	70·2	72·1	71·6	66·6	67·3	65·3
9	66·7	64·4	67·1	65·0	67·0	68·0	69·9	73·2	72·1	66·9	66·6	65·4
10	66·1	64·4	67·4	65·3	66·4	66·3	68·5	73·7	70·2	67·1	66·1	66·3
11	67·0	66·3	66·9	64·9	67·2	66·0	68·0	73·2	70·1	67·2	65·7	65·5
12	66·3	66·2	66·8	65·0	67·5	66·0	68·9	73·6	70·2	67·1	66·8	65·4
13	64·4	65·5	65·5	66·5	67·6	66·1	69·2	74·0	71·2	66·6	65·4	66·5
14	64·3	66·8	66·2	66·9	66·8	65·5	69·7	73·9	69·5	67·2	66·8	66·4
15	64·3	66·9	64·7	67·6	67·1	66·8	69·7	73·1	67·6	67·3	67·2	66·8
16	65·3	66·2	65·4	67·1	66·5	67·9	68·2	71·7	67·0	66·9	66·5	66·5
17	65·9	67·5	65·6	68·0	67·3	67·9	68·8	71·6	67·1	66·9	67·0	67·6
18	66·2	68·1	66·3	67·4	66·4	67·3	69·1	72·1	67·3	67·0	66·6	68·1
19	66·7	66·8	67·1	66·5	65·9	67·1	68·9	72·7	67·1	66·8	65·9	66·0
20	66·9	65·8	66·4	65·3	65·6	66·7	70·0	72·7	68·2	67·3	66·4	65·4
21	66·7	65·2	66·9	65·5	66·3	67·7	70·9	72·9	66·9	67·0	65·2	66·2
22	66·3	66·3	67·1	66·8	66·9	66·9	72·1	72·3	66·4	66·9	64·1	65·8
23	67·0	67·3	67·3	66·1	67·6	66·9	72·5	71·1	66·8	66·5	64·9	66·2
24	65·8	66·7	67·0	66·4	66·9	66·5	71·9	70·6	67·9	67·1	65·6	66·4
25	66·2	66·3	66·2	66·6	67·4	65·9	72·0	70·5	67·4	66·0	65·1	65·4
26	67·1	66·7	64·8	65·9	67·7	65·6	71·9	70·1	67·8	66·2	64·9	65·3
27	67·2	67·2	65·6	65·4	67·0	66·0	71·9	70·9	67·6	66·7	65·2	65·6
28	66·7	67·2	65·6	65·4	66·6	67·1	72·7	71·1	67·7	66·4	65·8	66·2
29	66·1		66·4	65·0	68·6	67·8	73·5	70·6	66·1	66·6	66·9	67·2
30	66·1		66·6	66·7	67·8	66·9	73·6	69·8	66·9	67·5	66·0	66·9
31	65·0		66·9		67·5		73·0	69·3		66·2		66·4
Means.	66°·07	65°·97	66°·46	65°·79	66°·88	67°·16	69°·95	71°·93	68°·78	66°·76	66°·22	66°·37

TABLE V.—MONTHLY MEAN DIURNAL INEQUALITY OF HORIZONTAL MAGNETIC FORCE.

(The results are expressed in terms of the whole Horizontal Force, diminished in each case by the smallest hourly value, the unit in the table being ·00001 of the whole Horizontal Force. The letters u *and* c *indicate respectively values uncorrected for, and corrected for temperature.)*

1911.

Hour, Greenwich Civil Time.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
	u	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*
Midn.	55	69	81	98	131	157	142	170	150	174	114	133	145	160	132	153	167	183	121	135	41	59	20	29
1h	60	72	78	93	135	157	137	163	132	154	114	131	143	155	128	146	162	178	127	141	43	59	23	30
2	59	66	84	96	124	141	129	150	132	149	112	126	134	144	128	144	154	168	131	143	43	57	27	29
3	62	66	89	97	125	135	132	148	130	145	112	124	126	133	124	137	155	167	135	144	49	58	40	40
4	72	74	90	95	134	139	129	140	129	141	103	112	125	130	120	130	159	168	141	148	64	70	52	49
5	78	78	95	98	142	142	130	137	113	120	89	96	117	119	115	123	155	159	147	151	76	80	61	56
6	85	82	108	108	149	144	134	136	92	97	74	79	104	104	103	108	144	146	145	147	86	88	60	50
7	85	82	114	112	146	139	116	116	68	71	49	51	80	80	80	83	117	119	133	133	81	83	53	43
8	63	60	95	95	129	122	83	83	36	36	20	20	34	31	34	37	81	81	101	101	55	54	32	22
9	38	35	57	57	88	78	48	46	11	11	0	0	4	1	1	4	29	26	53	50	24	23	14	4
10	26	23	20	20	37	30	19	19	0	0	3	3	0	0	0	0	0	0	11	8	6	5	16	6
11	12	9	0	0	7	2	0	0	9	9	12	12	17	17	12	15	13	13	0	0	1	0	32	24
Noon.	0	0	2	2	0	0	5	10	23	28	28	30	36	36	32	35	55	57	18	20	0	2	45	37
13h	11	15	2	5	9	14	32	43	43	55	42	49	63	68	58	66	85	89	27	31	10	14	51	46
14	22	29	6	14	31	43	60	79	63	80	71	78	85	92	72	82	106	113	39	48	17	26	42	39
15	18	27	5	17	57	71	82	103	94	113	104	113	113	123	76	86	111	120	43	55	15	26	17	17
16	12	24	1	18	74	93	100	123	121	143	111	125	132	144	86	99	112	124	50	64	14	28	0	0
17	17	29	15	35	85	109	119	145	148	170	134	151	142	157	101	117	118	132	65	79	25	41	6	8
18	25	34	39	61	101	127	128	154	181	203	143	162	153	170	115	131	139	153	94	108	34	50	15	19
19	31	35	57	77	114	140	139	167	192	214	146	165	151	168	129	147	156	170	106	120	40	56	15	19
20	40	42	67	84	125	151	148	179	180	202	140	159	147	164	137	155	167	183	103	117	42	58	19	23
21	52	52	77	92	122	146	149	180	171	195	125	146	144	164	143	164	164	180	115	129	40	56	21	28
22	52	56	78	93	120	144	144	172	174	198	121	142	145	165	141	159	164	180	111	125	32	48	21	28
23	47	54	79	96	125	149	141	169	171	195	124	143	142	162	141	159	166	180	110	124	31	49	17	26
Means corrected for Temperature.	46·4		65·1		107·2		118·0		121·0		97·9		112·0		103·3		128·7		96·7		45·4		28·0	

TABLE VI.—MONTHLY MEAN TEMPERATURE at each HOUR of the DAY within the box inclosing the HORIZONTAL FORCE MAGNET.

1911.

Hour, Greenwich Civil Time.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	For the Year.
Midn.	66°·5	66°·3	67°·1	66°·3	67°·3	67°·5	70°·2	72°·3	69°·1	67°·0	66°·6	66°·8	67°·75
1h	66·4	66·2	66·9	66·2	67·2	67·4	70·1	72·2	69·1	67·0	66·5	66·7	67·66
2	66·2	66·1	66·7	66·0	67·0	67·3	70·0	72·1	69·0	66·9	66·4	66·5	67·52
3	66·1	65·9	66·4	65·8	66·9	67·2	69·9	72·0	68·9	66·8	66·2	66·4	67·37
4	66·0	65·8	66·2	65·6	66·8	67·1	69·8	71·9	68·8	66·7	66·1	66·3	67·26
5	65·9	65·7	66·0	65·4	66·6	67·0	69·7	71·8	68·6	66·6	66·0	66·2	67·13
6	65·8	65·6	65·8	65·2	66·5	66·9	69·6	71·7	68·5	66·5	65·9	66·0	67·00
7	65·8	65·5	65·7	65·1	66·4	66·8	69·6	71·6	68·5	66·4	65·9	66·0	66·94
8	65·8	65·6	65·7	65·1	66·3	66·7	69·5	71·6	68·4	66·4	65·8	66·0	66·91
9	65·8	65·6	65·6	65·0	66·3	66·7	69·5	71·6	68·3	66·3	65·8	66·0	66·87
10	65·8	65·6	65·7	65·1	66·3	66·7	69·6	71·5	68·4	66·3	65·8	66·0	66·90
11	65·8	65·6	65·8	65·1	66·3	66·7	69·6	71·6	68·4	66·4	65·8	66·1	66·93
Noon.	65·9	65·6	66·0	65·3	66·5	66·8	69·6	71·6	68·5	66·5	65·9	66·1	67·03
13h	66·1	65·7	66·2	65·6	66·8	67·0	69·8	71·8	68·6	66·6	66·0	66·2	67·20
14	66·2	65·9	66·5	65·9	67·0	67·0	69·9	71·9	68·7	66·8	66·2	66·3	67·36
15	66·3	66·1	66·6	66·0	67·1	67·1	70·0	71·9	68·8	66·9	66·3	66·4	67·46
16	66·4	66·3	66·8	66·1	67·2	67·3	70·1	72·0	68·9	67·0	66·4	66·4	67·57
17	66·4	66·4	67·0	66·2	67·2	67·4	70·2	72·1	69·0	67·0	66·5	66·5	67·66
18	66·3	66·5	67·1	66·2	67·2	67·5	70·3	72·1	69·0	67·0	66·5	66·6	67·69
19	66·1	66·4	67·1	66·3	67·2	67·5	70·3	72·2	69·0	67·0	66·5	66·6	67·68
20	66·0	66·3	67·1	66·4	67·2	67·5	70·3	72·2	69·1	67·0	66·5	66·6	67·68
21	65·9	66·2	67·0	66·4	67·3	67·6	70·4	72·3	69·1	67·0	66·5	66·7	67·70
22	66·1	66·2	67·0	66·3	67·3	67·6	70·4	72·2	69·1	67·0	66·5	66·7	67·70
23	66·2	66·3	67·0	66·3	67·3	67·5	70·4	72·2	69·0	67·0	66·6	66·8	67·72

TABLE VII.—MEAN VERTICAL MAGNETIC FORCE (diminished by a Constant) FOR EACH CIVIL DAY.

(Each result is the mean of 24 hourly ordinates from the photographic register, expressed in terms of the whole Vertical Force, the unit in the table being ·00001 of the whole Vertical Force. The letters u *and* c *indicate respectively values uncorrected for, and corrected for temperature.)*

1911.

Day of Month.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
	u	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*
d																								
1	483	726	347	647	428	701	406	658	429	687	481	741	455	717	583	737	504	739	349	605	305	563	208	455
2	452	723	354	639	445	684	390	677	409	686	490	756	459	732	580	742	508	720	327	593	315	571	230	488
3	437	695	364	637	467	731	381	654	393	668	496	756	461	729	565	740	518	712	308	570	325	583	242	496
4	451	705	409	665	455	723	356	645	395	670	514	764	459	730	543	731	513	714	313	577	355	596	239	501
5	434	707	432	690	445	692	338	658	422	674	543	782	482	734	539	729	508	713	315	573	329	589	238	481
6	446	696	418	693	437	699	289	638	437	695	563	794	503	746	530	722	509	716	319	581	297	578	226	499
7	437	699	398	673	443	701	276	629	408	719	540	796	525	745	539	725	515	705	312	583	298	552	231	491
8	450	695	409	673	441	701	286	625	388	690	516	789	534	746	553	720	525	700	314	578	309	565	193	478
9	490	731	401	676	441	680	285	596	443	688	513	777	553	775	580	726	534	707	331	604	301	561	180	469
10	463	729	392	669	422	672	357	664	430	701	475	769	523	777	606	743	496	710	348	606	275	543	202	464
11	452	704	417	669	425	668	340	653	443	711	454	727	510	768	591	739	498	710	282	546	260	531	213	492
12	456	718	408	655	411	665	355	668	453	700	459	738	510	749	600	741	499	704	334	579	268	524	201	490
13	423	700	395	668	377	656	380	653	469	721	447	741	516	747	605	734	507	699	335	603	263	540	211	469
14	400	681	405	655	372	634	401	657	455	723	425	719	531	753	608	739	487	716	344	600	285	537	227	495
15	382	657	418	661	353	636	419	666	455	719	430	698	537	759	600	752	448	716	356	606	299	559	223	485
16	403	646	410	685	363	634	413	681	470	738	453	703	506	764	547	733	426	701	371	633	284	542	218	493
17	413	675	429	681	362	622	413	660	495	749	443	705	501	744	521	700	409	673	388	646	289	543	235	478
18	415	662	440	681	367	619	419	690	486	754	444	721	499	738	532	701	400	662	382	640	292	552	263	502
19	423	691	427	695	380	615	384	665	453	732	442	725	482	721	539	695	388	646	380	640	264	549	220	495
20	417	671	416	691	388	635	370	653	459	748	452	725	509	727	537	691	400	645	391	655	265	523	217	492
21	423	677	434	698	404	656	371	639	457	709	478	725	525	717	553	709	423	696	384	646	238	521	233	493
22	413	660	438	679	398	652	401	657	463	725	459	740	547	716	553	724	392	663	388	648	194	503	230	507
23	419	673	445	690	426	678	398	652	473	737	465	746	558	720	550	746	385	643	390	663	198	487	219	485
24	414	682	430	686	415	662	413	669	458	729	461	744	545	722	528	731	394	646	395	655	208	487	220	478
25	428	688	440	696	380	655	409	665	458	720	452	756	542	713	532	739	392	660	373	644	197	482	196	485
26	447	697	437	689	357	638	399	682	475	731	423	717	557	736	534	748	396	654	365	631	172	466	187	476
27	452	708	438	685	360	637	382	671	471	752	430	694	547	724	539	735	395	653	357	617	167	461	190	467
28	448	698	453	696	345	616	381	662	467	756	438	694	559	715	550	744	412	672	346	610	176	459	200	462
29	434	694			379	631	391	672	507	748	462	712	568	709	550	757	368	645	329	585	206	460	216	457
30	439	707			395	649	432	690	531	797	448	721	594	738	520	742	369	633	334	594	192	463	214	466
31	398	677			397	638			519	790			581	733	507	740			297	559			209	469

At the end of the year the magnet was readjusted, thus breaking the continuity of the values.

TABLE VIII.—MEAN TEMPERATURE for each CIVIL DAY within the box inclosing the VERTICAL FORCE MAGNET.

1911.

Day of Month.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
d 1	67°·7	65°·0	66°·3	67°·3	67°·0	66°·9	66°·8	71°·9	68°·1	67°·1	67°·0	67°·5
2	66·4	65·7	67·9	65·6	66·1	66·6	66·3	71·5	69·2	66·6	67·1	67·0
3	67·0	66·3	66·7	66·3	66·2	66·9	66·5	70·9	70·0	66·8	67·0	67·2
4	67·2	67·1	66·5	65·5	66·2	67·4	66·4	70·3	69·7	66·7	67·8	66·8
5	66·3	67·0	67·5	64·1	67·3	67·9	67·3	70·2	69·5	67·0	66·9	67·7
6	67·4	66·2	66·8	62·7	67·0	68·3	67·7	70·1	69·4	66·8	65·9	66·3
7	66·8	66·2	67·0	62·5	64·5	67·1	68·8	70·4	70·2	66·4	67·2	66·9
8	67·6	66·7	66·9	63·2	64·9	66·3	69·2	71·3	70·9	66·7	67·1	65·7
9	67·8	66·2	67·9	64·5	67·6	66·7	68·7	72·3	71·0	66·3	66·9	65·5
10	66·6	66·1	67·4	64·7	66·4	65·3	67·2	72·7	69·1	67·0	66·5	66·8
11	67·3	67·3	67·7	64·4	66·5	66·3	67·0	72·2	69·2	66·7	66·4	66·0
12	66·8	67·5	67·2	64·4	67·5	66·0	67·9	72·5	69·5	67·6	67·1	65·5
13	66·1	66·3	66·0	66·3	67·3	65·3	68·3	73·1	70·1	66·5	66·1	67·0
14	65·9	67·4	66·8	67·1	66·5	65·3	68·7	73·0	68·4	67·1	67·3	66·5
15	66·2	67·7	65·8	67·5	66·7	66·5	68·7	72·0	66·5	67·4	66·9	66·8
16	67·7	66·2	66·4	66·5	66·5	67·4	67·0	70·4	66·2	66·8	67·0	66·2
17	66·8	67·3	66·9	67·5	67·2	66·8	67·7	70·7	66·7	67·0	67·2	67·7
18	67·5	67·8	67·3	66·4	66·5	66·1	67·9	71·2	66·8	67·0	66·9	67·9
19	66·5	66·5	68·1	65·9	66·0	65·8	67·9	71·8	67·0	66·9	65·7	66·2
20	67·2	66·2	67·5	65·8	65·5	66·3	68·9	71·9	67·6	66·7	67·0	66·2
21	67·2	66·7	67·3	66·5	67·3	67·5	70·1	71·8	66·3	66·8	65·8	66·9
22	67·5	67·8	67·2	67·1	66·8	65·9	71·2	71·1	66·4	66·9	64·6	66·1
23	67·2	67·6	67·3	67·2	66·7	65·9	71·5	69·9	67·0	66·3	65·5	66·6
24	66·5	67·1	67·5	67·1	66·4	65·8	70·8	69·6	67·3	66·9	66·0	67·0
25	66·9	67·1	66·2	67·1	66·8	64·8	71·1	69·4	66·5	66·4	65·7	65·5
26	67·4	67·3	65·9	65·8	67·1	65·3	70·7	69·1	67·0	66·6	65·3	65·5
27	67·1	67·5	66·1	65·5	65·9	66·7	70·8	69·9	67·0	66·9	65·3	66·1
28	67·4	67·7	66·4	65·9	65·5	67·1	71·8	70·0	66·9	66·7	65·8	66·8
29	66·9		67·3	65·9	67·8	67·4	72·5	69·4	66·1	67·1	67·2	67·8
30	66·5		67·2	67·0	66·6	66·3	72·4	68·7	66·7	66·9	66·4	67·3
31	66·0		67·8		66·4		72·0	68·2		66·8		66·9
Means	66°·95	66°·84	66°·99	65°·78	66°·54	66°·46	69°·03	70°·89	68°·08	66°·82	66°·49	66°·64

TABLE IX.—MONTHLY MEAN DIURNAL INEQUALITY OF VERTICAL MAGNETIC FORCE.

(The results are expressed in terms of the whole Vertical Force, diminished in each case by the smallest hourly value, the unit in the table being ·00001 of the whole Vertical Force. The letters u *and* c *indicate respectively values uncorrected for, and corrected for temperature.)*

1911.

Hour, Greenwich Civil Time.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
	u	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*	*u*	*c*
Midn.	19	8	22	12	37	18	55	41	50	41	51	38	40	29	45	33	39	29	29	21	24	10	19	3
1^h	9	0	17	9	30	16	48	36	45	38	44	33	33	25	40	28	34	26	21	15	19	7	13	1
2	5	0	10	6	25	15	43	35	42	37	37	28	28	22	38	30	31	25	17	13	12	2	10	0
3	3	2	4	2	21	15	41	37	39	36	36	32	28	26	36	30	31	27	14	10	11	6	6	0
4	2	5	4	4	20	18	38	38	38	40	40	38	29	29	39	35	29	27	14	12	11	8	6	2
5	4	9	6	11	20	25	37	42	41	45	41	41	34	36	41	39	31	33	13	13	10	9	3	4
6	2	9	6	13	16	23	37	46	43	49	36	40	33	37	42	42	33	37	13	15	10	11	1	4
7	4	14	7	14	16	25	36	47	42	50	34	38	34	40	42	44	34	40	16	18	10	11	0	3
8	5	12	9	14	19	28	33	44	35	45	29	35	28	34	35	37	30	38	18	20	8	9	1	6
9	3	10	10	15	13	24	24	37	25	35	21	27	18	24	24	29	20	28	12	17	5	6	1	6
10	1	8	4	9	6	15	10	21	7	17	11	17	9	15	12	14	11	17	0	0	0	1	5	8
11	0	5	1	3	2	7	0	7	0	6	4	8	3	7	4	6	2	6	2	0	1	0	5	8
Noon.	1	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	8	4	6	3	6	7
13^h	6	3	8	4	14	8	16	8	19	12	12	8	6	2	11	9	11	9	17	9	12	4	11	7
14	16	9	24	14	29	17	36	24	35	26	28	21	21	15	28	22	24	18	27	17	22	12	14	6
15	23	14	37	23	45	31	53	39	48	37	39	30	37	29	43	35	35	27	39	29	28	16	14	6
16	29	18	53	37	61	42	64	50	62	51	53	42	51	40	55	47	45	35	43	33	29	17	18	6
17	37	26	59	43	70	49	73	57	71	58	64	51	63	50	62	52	47	37	44	34	30	16	24	12
18	37	28	60	44	68	45	77	61	75	64	69	56	65	52	62	50	44	34	45	35	30	18	27	13
19	33	28	56	42	67	44	77	61	75	64	68	53	63	50	55	43	46	36	43	35	30	18	25	11
20	30	27	47	37	61	40	76	60	72	61	66	51	59	46	55	43	44	34	42	36	27	15	23	9
21	24	21	37	31	54	35	69	53	68	59	62	47	55	40	54	42	41	31	37	33	25	13	21	7
22	18	15	29	21	47	28	62	48	64	55	59	44	54	39	49	37	38	28	31	25	23	9	19	5
23	16	9	27	17	41	22	58	44	57	48	52	39	48	35	46	34	37	29	31	25	23	9	18	2
Means corrected for Temperature.	11·8		17·7		24·6		39·0		40·6		34·0		30·1		32·5		27·1		19·5		9·6		5·7	

TABLE X.—MONTHLY MEAN TEMPERATURE at each HOUR of the DAY within the box inclosing the VERTICAL FORCE MAGNET.

1911.

Hour, Greenwich Civil Time.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	For the Year.
Midn.	67°·4	67°·1	67°·5	66°·2	66°·8	66°·8	69°·3	71°·2	68°·4	67°·0	66°·8	67°·1	67°·63
1^h	67·3	67·0	67·3	66·1	66·7	66·7	69·2	71·2	68·3	66·9	66·7	66·9	67·52
2	67·1	66·8	67·1	65·9	66·6	66·6	69·1	71·0	68·2	66·8	66·6	66·8	67·38
3	66·9	66·7	66·9	65·7	66·5	66·4	68·9	70·9	68·1	66·8	66·4	66·6	67·23
4	66·7	66·6	66·7	65·5	66·3	66·3	68·8	70·8	68·0	66·7	66·3	66·5	67·10
5	66·6	66·4	66·4	65·3	66·2	66·2	68·7	70·7	67·8	66·6	66·2	66·3	66·95
6	66·5	66·3	66·3	65·1	66·1	66·0	68·6	70·6	67·7	66·5	66·1	66·2	66·83
7	66·4	66·3	66·2	65·0	66·0	66·0	68·5	70·5	67·6	66·5	66·1	66·2	66·78
8	66·5	66·4	66·2	65·0	65·9	65·9	68·5	70·5	67·5	66·5	66·1	66·1	66·76
9	66·5	66·4	66·1	64·9	65·9	65·9	68·5	70·4	67·5	66·4	66·1	66·1	66·72
10	66·5	66·4	66·2	65·0	65·9	65·9	68·5	70·5	67·6	66·6	66·1	66·2	66·78
11	66·6	66·5	66·4	65·2	66·1	66·0	68·6	70·5	67·7	66·7	66·2	66·2	66·89
Noon.	66·8	66·6	66·6	65·5	66·5	66·2	68·8	70·6	67·9	66·8	66·3	66·3	67·08
13^h	67·0	66·8	66·9	65·9	66·7	66·4	69·0	70·7	68·0	67·0	66·5	66·5	67·28
14	67·2	67·1	67·2	66·1	66·8	66·5	69·1	70·9	68·2	67·1	66·6	66·7	67·46
15	67·3	67·3	67·3	66·2	66·9	66·6	69·2	71·0	68·3	67·1	66·7	66·7	67·55
16	67·4	67·4	67·5	66·2	66·9	66·7	69·3	71·0	68·4	67·1	66·7	66·9	67·63
17	67·4	67·4	67·6	66·3	67·0	66·8	69·4	71·1	68·4	67·1	66·8	66·9	67·68
18	67·3	67·4	67·7	66·3	66·9	66·8	69·4	71·2	68·4	67·1	66·7	67·0	67·68
19	67·1	67·3	67·7	66·3	66·9	66·9	69·4	71·2	68·4	67·0	66·7	67·0	67·66
20	67·0	67·1	67·6	66·3	66·9	66·9	69·4	71·2	68·4	66·9	66·7	67·0	67·62
21	67·0	66·9	67·5	66·3	66·8	66·9	69·5	71·2	68·4	66·8	66·7	67·0	67·58
22	67·0	67·0	67·5	66·2	66·8	66·9	69·5	71·2	68·4	66·9	66·8	67·0	67·60
23	67·2	67·1	67·5	66·2	66·8	66·8	69·4	71·2	68·3	66·9	66·8	67·1	67·61

TABLE XI.—MEAN MAGNETIC DECLINATION, HORIZONTAL FORCE, and VERTICAL FORCE, in each MONTH.

(The results for Horizontal Force and Vertical Force are corrected for Temperature.)

Month, 1911.	DECLINATION WEST in Arc.	HORIZONTAL FORCE in terms of the whole Horizontal Force (diminished by a Constant).	VERTICAL FORCE in terms of the whole Vertical Force (diminished by a Constant).	DECLINATION diminished by 15° and expressed as Westerly Force (in terms of C. G. S. UNIT)	HORIZONTAL FORCE (diminished by a Constant) (in terms of C. G. S. UNIT)	VERTICAL FORCE (diminished by a Constant) (in terms of C. G. S. UNIT)
January	15° 36'·1	861	693	1946	1595	3006
February	15. 35·6	871	676	1919	1614	2932
March	15. 35·2	816	661	1897	1512	2867
April	15. 34·8	788	658	1876	1460	2854
May	15. 33·9	959	722	1827	1777	3132
June	15. 33·3	1030	739	1795	1908	3205
July	15. 33·1	1011	737	1784	1873	3197
August	15. 32·3	969	731	1741	1795	3171
September	15. 31·8	893	686	1714	1655	2975
October	15. 31·3	835	609	1687	1547	2641
November	15. 29·8	713	530	1606	1321	2299
December	15. 29·0	721	483	1563	1336	2095
Means	15° 33'·0	......	......	1780	......	......
Number of Column	1	2	3	4	5	6

The units in columns 2 and 3 are ·00001 of the whole Horizontal and Vertical Forces respectively, of which the mean values for the year in C. G. S. units are 0·18529 and 0·43374 respectively.

HORIZONTAL FORCE.—At the end of the year experiments were made for determination of the angle of torsion, thus breaking the continuity of the values.

VERTICAL FORCE.—At the end of the year the magnet was readjusted, thus breaking the continuity of the values.

TABLE XII.—MEAN DIURNAL INEQUALITIES OF MAGNETIC DECLINATION, HORIZONTAL FORCE, and VERTICAL FORCE, for the YEAR 1911.

(Each result is the mean of the twelve monthly mean values, the annual means for each element being diminished by the smallest hourly value. The results for Horizontal Force and Vertical Force are corrected for temperature.)

Hour, Greenwich Civil Time.	Inequality of			Inequality of		
	Declination West in Arc.	Horizontal Force in terms of the whole Horizontal Force.	Vertical Force in terms of the whole Vertical Force.	Declination expressed as Westerly Force	Horizontal Force	Vertical Force
				in terms of C. G. S. Unit.		
Midnight.	0.56	118.3	22.3	30.2	219.2	96.7
1h	0.84	114.9	18.2	45.3	212.9	78.9
2	1.06	109.3	16.5	57.1	202.5	71.6
3	1.12	107.8	17.3	60.4	199.7	75.0
4	1.01	107.9	20.0	54.4	199.9	86.7
5	0.74	104.9	24.3	39.9	194.4	105.4
6	0.54	99.0	25.9	29.1	183.4	112.3
7	0.23	84.3	27.4	12.4	156.2	118.8
8	0.00	53.4	25.5	0.0	98.9	110.6
9	0.40	19.5	20.2	21.6	36.1	87.6
10	1.69	1.1	10.5	91.1	2.0	45.5
11	3.47	0.0	4.0	187.0	0.0	17.3
Noon.	5.06	13.0	0.0	272.7	24.1	0.0
13h	5.75	32.8	5.6	309.9	60.8	24.3
14	5.40	51.9	15.5	291.1	96.2	67.2
15	4.42	64.2	25.0	238.2	119.0	108.4
16	3.30	73.7	33.5	177.9	136.6	145.3
17	2.26	89.3	39.1	121.8	165.5	169.6
18	1.52	105.9	40.4	81.9	196.2	175.2
19	1.03	114.8	39.1	55.5	212.7	169.6
20	0.61	118.0	37.0	32.9	218.6	160.5
21	0.36	119.3	33.0	19.4	221.1	143.1
22	0.34	117.4	28.2	18.3	217.5	122.3
23	0.39	117.1	24.8	21.0	217.0	107.6
Means . . .	1.75	80.7	23.1	94.5	149.6	100.0
Number of Column .	1	2	3	4	5	6

The units in columns 2 and 3 are ·00001 of the whole Horizontal and Vertical Forces respectively, the mean values of which for the year in C. G. S. units are 0·18529 and 0·43374 respectively.

TABLE XIII.—DIURNAL RANGE OF DECLINATION AND HORIZONTAL FORCE, on each CIVIL DAY, as deduced from the TWENTY-FOUR HOURLY MEASURES of ORDINATES of the PHOTOGRAPHIC REGISTER.

(The Declination is expressed in minutes of arc; the unit for Horizontal Force is ·00001 of the whole Horizontal Force. The results for Horizontal Force are corrected for temperature.)

1911.

Day of Month.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
	Dec.	H.F.	Dec.	H.F.	Dec.	H.F.	Dec.	H.F.	Dec.	H.F.	Dec.	H.F.	Dec.	H.F.	Dec.	H.F.	Dec.	H.F.	Dec.	H.F.	Dec.	H.F.	Dec.	H.F.
d	′		′		′		′		′		′		′		′		′		′		′		′	
1	5.6	111	7.6	181	9.0	282	10.4	232	10.0	211	10.6	264	13.7	337	8.3	253	8.4	202	6.4	219	3.4	147	3.2	95
2	6.5	224	9.0	374	5.1	211	8.8	155	8.4	237	6.4	199	7.8	210	6.8	158	9.7	155	10.5	342	6.5	155	3.8	89
3	6.4	188	4.8	133	10.8	285	10.7	282	10.4	258	5.8	179	5.4	150	9.6	211	7.8	185	8.6	211	8.7	232	4.0	103
4	5.6	173	6.1	84	8.9	163	8.7	253	9.3	222	...	284	8.1	194	5.9	241	7.4	205	7.0	177	5.6	186	1.8	106
5	6.9	108	9.7	312	7.4	309	9.3	220	10.4	221	...	225	6.7	182	8.4	195	9.1	167	7.6	192	7.3	222	2.8	75
6	6.5	183	7.5	172	8.6	279	8.0	195	9.8	226	10.5	325	7.2	212	8.8	154	8.8	233	9.1	239	4.6	124	4.8	383
7	4.1	141	6.2	129	7.2	200	9.8	166	15.5	362	6.9	150	9.9	300	7.3	198	10.4	206	6.9	193	3.9	116	3.9	115
8	9.9	124	5.1	155	7.3	355	16.2	243	7.7	212	6.4	189	12.7	388	10.1	171	6.3	207	9.1	282	8.6	240	3.6	71
9	9.4	116	6.4	139	6.1	219	20.9	546	8.5	337	10.4	162	8.4	237	9.8	242	7.8	191	9.7	272	12.2	181	2.5	63
10	6.4	164	7.1	240	7.0	154	8.8	236	7.0	257	11.8	291	12.7	367	11.7	227	9.9	205	26.1	410	5.8	99	3.1	137
11	5.9	224	5.7	221	7.3	130	12.2	133	9.1	197	7.0	332	7.8	209	10.9	244	12.8	207	31.5	407	5.1	101	17.8	530
12	2.9	157	5.9	140	8.3	235	9.1	305	8.0	309	8.0	274	10.5	247	9.5	247	11.2	248	5.7	265	5.5	190	2.9	156
13	7.9	210	12.2	216	8.6	210	8.1	181	9.1	282	8.8	230	11.1	214	10.0	236	10.2	245	6.7	185	12.0	330	1.9	100
14	4.1	177	7.8	197	7.5	262	7.3	180	11.3	285	6.2	260	10.1	152	7.5	150	6.3	170	5.4	90	6.5	321	4.1	183
15	6.8	100	3.9	142	8.5	230	8.2	208	11.0	479	8.9	325	12.0	233	6.4	186	7.7	175	5.1	142	8.9	151	2.1	60
16	9.4	224	7.3	136	8.9	220	14.4	301	9.5	359	8.7	196	10.1	237	8.2	250	9.5	277	9.1	223	5.4	94	3.1	89
17	4.3	73	8.7	249	8.0	225	7.8	390	9.2	299	7.7	213	10.2	227	7.8	180	10.1	170	9.3	355	5.6	130	11.3	125
18	6.2	151	8.2	238	8.7	148	10.4	336	7.1	266	7.7	130	9.8	237	6.6	146	6.0	125	10.4	319	3.5	92	3.1	109
19	4.5	192	4.5	190	7.5	142	10.1	298	8.7	308	6.5	162	8.7	245	12.0	203	10.0	212	10.4	292	4.8	127	2.7	102
20	5.1	133	4.5	133	17.5	599	10.9	248	13.0	252	10.0	236	7.1	213	10.2	131	13.2	575	6.4	221	5.6	120	2.7	131
21	2.7	23	21.1	430	11.2	234	11.2	333	9.9	283	9.9	305	6.3	172	8.3	210	9.2	460	5.2	128	4.8	156	3.5	105
22	5.0	234	11.2	422	8.6	308	8.7	235	6.4	239	5.5	245	7.6	202	7.8	160	8.5	399	6.0	121	3.4	26	2.1	112
23	3.5	173	9.1	244	11.7	301	6.8	254	9.3	337	13.2	259	6.8	146	14.2	215	9.5	250	4.9	130	3.1	69	2.5	146
24	14.0	213	8.7	287	12.3	255	10.2	331	7.6	178	8.6	97	8.0	111	10.4	307	7.8	200	8.5	168	3.9	132	2.5	170
25	9.6	229	7.9	236	8.0	309	9.6	190	8.7	154	10.7	177	9.2	170	11.0	275	7.6	274	8.2	227	3.1	143	4.9	217
26	7.5	272	8.3	339	15.7	214	10.4	212	6.0	142	9.4	153	8.4	208	8.6	275	8.0	275	4.5	85	4.0	101	11.1	273
27	6.3	169	12.4	239	13.4	367	11.7	253	7.1	212	8.4	229	9.7	214	9.0	298	7.6	214	5.2	158	3.3	69	4.3	97
28	9.0	280	10.0	215	9.3	212	10.1	211	8.5	167	10.9	190	18.8	428	10.1	233	8.6	215	5.0	186	3.3	55	4.6	124
29	6.5	92			10.0	308	7.2	206	7.0	244	9.3	185	11.0	281	7.6	195	6.4	194	5.5	154	4.2	158	2.7	98
30	5.8	172			7.3	211	12.5	162	10.6	242	8.8	162	7.1	244	8.2	203	7.2	128	3.6	164	3.3	73	4.8	90
31	8.6	241			7.9	97			12.5	356			7.2	341	10.7	147			3.5	130			9.5	205
Means	6′.5	176	8′.1	221	9′.1	248	10′.3	250	9′.2	262	8′.7	221	9′.4	236	9′.1	211	8′.8	232	8′.4	216	5′.5	145	4′.4	144

The mean of the twelve monthly values is, for Declination 8′·13, and for Horizontal Force 213·5.

TABLE XIV.—MONTHLY MEAN DIURNAL RANGE, and SUMS of HOURLY DEVIATIONS from MEAN, for DECLINATION, HORIZONTAL FORCE, and VERTICAL FORCE, as deduced from the Monthly Mean Diurnal Inequalities, Tables II., V., and IX.

(The Declination is expressed in minutes of arc; the units for Horizontal Force and Vertical Force are ·00001 of the whole Horizontal and Vertical Forces respectively. The results for Horizontal Force and Vertical Force are corrected for temperature.)

Month, 1911.	Difference between the Greatest and Least of the 24 Hourly Values.			Sum of the 24 Hourly Deviations from the Mean Value.		
	Declination.	Horizontal Force.	Vertical Force.	Declination.	Horizontal Force.	Vertical Force.
January	5′.1	82	28	25′.6	509	172
February	6.0	112	44	31.4	845	275
March	6.6	157	49	36.6	1055	244
April	7.9	180	61	45.1	1126	294
May	8.4	214	64	45.0	1421	324
June	7.7	165	56	45.7	1122	273
July	8.3	170	52	48.5	1157	276
August	7.8	164	52	41.7	1054	247
September	7.4	183	40	40.0	1089	179
October	6.0	151	36	32.5	1029	223
November	4.4	88	18	23.7	490	104
December	3.2	56	13	17.6	280	64
Means	6′.57	143.5	42.8	36′.12	931.4	222.9

TABLE XV.—VALUES of the CO-EFFICIENTS in the PERIODICAL EXPRESSION

$$V_t = m + a_1 \cos t + b_1 \sin t + a_2 \cos 2t + b_2 \sin 2t + a_3 \cos 3t + b_3 \sin 3t + a_4 \cos 4t + b_4 \sin 4t$$

(in which t is the time from Greenwich mean midnight converted into arc at the rate of 15° to each hour, and V_t the mean value of the magnetic element at the time t for each month and for the year, as given in Tables II., V., IX., and XII., the values for Horizontal Force and Vertical Force being corrected for temperature).

The values of the co-efficients for Declination are given in minutes of arc: the units for Horizontal Force and Vertical Force are ·00001 of the whole Horizontal and Vertical Forces respectively.

Month, 1911.	m	a_1	b_1	a_2	b_2	a_3	b_3	a_4	b_4
	DECLINATION WEST.								
January	2′·16	− 1′·60	+ 0′·40	+ 0′·40	+ 0′·86	− 0′·29	− 0′·17	+ 0′·09	+ 0′·20
February	2·42	− 1·93	+ 0·14	+ 0·59	+ 1·35	− 0·14	− 0·47	+ 0·02	+ 0·21
March	2·17	− 1·77	− 0·43	+ 0·66	+ 1·66	− 0·19	− 0·91	+ 0·23	+ 0·31
April	2·43	− 2·16	− 1·12	+ 1·04	+ 1·61	− 0·67	− 0·67	+ 0·35	+ 0·27
May	3·56	− 1·73	− 1·78	+ 1·41	+ 1·37	− 0·79	− 0·24	+ 0·19	− 0·02
June	3·21	− 1·52	− 2·22	+ 1·03	+ 1·39	− 0·43	− 0·27	+ 0·01	+ 0·07
July	3·30	− 1·82	− 2·25	+ 1·21	+ 1·38	− 0·45	− 0·34	− 0·01	+ 0·13
August	2·88	− 1·79	− 1·52	+ 1·52	+ 1·12	− 0·65	− 0·37	+ 0·05	+ 0·21
September	2·47	− 1·83	− 1·11	+ 1·29	+ 1·22	− 0·68	− 0·40	+ 0·37	+ 0·11
October	2·11	− 1·85	− 0·39	+ 0·55	+ 1·18	− 0·73	− 0·33	+ 0·39	+ 0·16
November	1·70	− 1·42	+ 0·02	+ 0·56	+ 0·73	− 0·38	+ 0·06	+ 0·20	+ 0·01
December	1·16	− 1·11	+ 0·27	+ 0·45	+ 0·18	− 0·19	+ 0·13	+ 0·16	− 0·17
For the Year	1·75	− 1·71	− 0·83	+ 0·89	+ 1·17	− 0·47	− 0·33	+ 0·17	+ 0·12
	HORIZONTAL FORCE.								
January	46·4	+ 23·7	+ 18·4	− 10·3	+ 2·0	+ 5·7	− 7·3	+ 0·4	+ 3·9
February	65·1	+ 44·1	+ 21·0	− 17·9	− 10·2	+ 4·9	− 6·8	+ 0·5	+ 8·7
March	107·2	+ 63·4	+ 4·2	− 30·6	− 4·1	+ 14·1	− 5·1	− 0·6	+ 7·1
April	118·0	+ 69·0	− 21·7	− 27·3	+ 6·4	+ 7·9	− 10·0	− 0·8	+ 5·4
May	121·0	+ 75·9	− 52·7	− 23·8	+ 10·3	− 2·9	− 4·6	+ 4·8	− 1·1
June	97·9	+ 55·0	− 44·3	− 18·5	+ 18·4	− 2·1	− 1·6	+ 3·1	− 0·4
July	112·0	+ 60·9	− 41·2	− 18·1	+ 21·4	+ 1·0	− 8·9	+ 6·4	+ 0·6
August	103·3	+ 64·0	− 24·7	− 11·8	+ 14·1	− 5·9	− 12·9	+ 5·1	+ 4·2
September	128·7	+ 67·7	− 19·9	− 17·5	+ 19·2	− 3·0	− 19·3	+ 4·8	+ 10·5
October	96·7	+ 59·1	+ 14·4	− 26·2	+ 6·5	+ 1·7	− 10·3	+ 3·7	+ 9·7
November	45·4	+ 23·7	+ 10·6	− 19·5	+ 1·8	+ 1·9	− 8·4	+ 4·5	+ 6·2
December	28·0	+ 4·4	+ 10·1	+ 0·1	+ 6·0	− 9·8	− 10·6	+ 6·2	+ 3·9
For the Year	80·7	+ 50·9	− 10·5	− 18·5	+ 7·7	+ 1·1	− 8·8	+ 3·2	+ 4·9
	VERTICAL FORCE.								
January	11·8	+ 0·4	− 8·3	− 7·8	− 4·2	+ 0·6	+ 0·3	0·0	− 0·1
February	17·7	+ 2·0	− 14·7	− 11·1	− 3·6	+ 3·5	+ 1·7	− 0·1	− 0·4
March	24·6	+ 3·2	− 10·3	− 12·9	− 2·5	+ 4·4	+ 1·1	− 1·9	− 0·9
April	39·0	+ 12·4	− 7·5	− 16·3	− 3·7	+ 6·2	0·0	− 2·3	+ 0·6
May	40·6	+ 14·0	− 8·3	− 16·7	− 4·1	+ 5·6	− 1·8	− 1·5	+ 0·9
June	34·0	+ 12·0	− 6·8	− 14·0	− 2·5	+ 3·9	− 0·3	− 0·4	− 0·9
July	30·1	+ 9·5	− 6·8	− 15·1	− 3·6	+ 4·8	− 0·2	+ 0·1	− 1·2
August	32·5	+ 8·7	− 4·8	− 14·7	− 0·2	+ 6·4	− 1·5	− 1·3	− 0·6
September	27·1	+ 6·4	− 0·5	− 10·9	− 1·5	+ 6·1	− 1·1	− 1·3	+ 1·0
October	19·5	+ 5·0	− 11·1	− 7·7	− 1·6	+ 4·1	− 1·7	− 1·5	+ 1·5
November	9·6	+ 1·1	− 4·7	− 4·8	+ 0·5	+ 1·7	− 1·5	+ 0·1	+ 0·7
December	5·7	− 2·3	− 3·1	− 1·6	− 1·6	− 0·7	+ 1·0	+ 0·9	− 0·3
For the Year	23·1	+ 6·0	− 7·2	− 11·1	− 2·4	+ 3·9	− 0·3	− 0·8	0·0

TABLE XVI.—VALUES of the CO-EFFICIENTS and CONSTANT ANGLES in the PERIODICAL EXPRESSIONS

$$V_t = m + c_1 \sin(t + \alpha) + c_2 \sin(2t + \beta) + c_3 \sin(3t + \gamma) + c_4 \sin(4t + \delta)$$
$$V_{t'} = m + c_1 \sin(t' + \alpha') + c_2 \sin(2t' + \beta') + c_3 \sin(3t' + \gamma') + c_4 \sin(4t' + \delta')$$

(in which t and t' are the times from Greenwich mean midnight and apparent midnight respectively, converted into arc at the rate of 15° to each hour, and V_t, $V_{t'}$ the mean value of the magnetic element at the time t or t' for each month and for the year, as given in Tables II., V., IX., and XII., the values for Horizontal Force and Vertical Force being corrected for temperature).

The values of the co-efficients for Declination are given in minutes of arc: the units for Horizontal Force and Vertical Force are ·00001 of the whole Horizontal and Vertical Forces respectively.

Month, 1911.	m	c_1	α	α'	c_2	β	β'	c_3	γ	γ'	c_4	δ	δ'
						DECLINATION WEST.							
	′	′	° ′	° ′	′	° ′	° ′	′	° ′	° ′	′	° ′	° ′
January	2·16	1·64	284. 1	286. 19	0·95	24. 40	29. 16	0·34	238. 55	245. 49	0·21	24. 10	33. 22
February	2·42	1·94	274. 13	277. 43	1·47	23. 33	30. 32	0·49	197. 4	207. 33	0·21	5. 41	19. 39
March	2·17	1·82	256. 19	258. 32	1·78	21. 33	25. 59	0·93	192. 3	198. 43	0·39	36. 28	45. 21
April	2·43	2·43	242. 31	242. 36	1·91	32. 51	33. 2	0·95	225. 9	225. 25	0·44	53. 1	53. 23
May	3·56	2·48	224. 5	223. 13	1·97	45. 52	44. 9	0·83	253. 13	250. 38	0·19	96. 35	93. 9
June	3·21	2·69	214. 23	214. 26	1·73	36. 24	36. 30	0·51	238. 24	238. 33	0·07	6. 33	6. 45
July	3·30	2·90	218. 57	220. 18	1·84	41. 18	44. 0	0·56	233. 5	237. 9	0·13	356. 20	361. 45
August	2·88	2·35	229. 39	230. 39	1·88	53. 40	55. 40	0·75	240. 34	243. 34	0·21	12. 22	16. 22
September	2·47	2·14	238. 41	237. 31	1·78	46. 38	44. 17	0·79	239. 52	236. 21	0·39	73. 43	69. 2
October	2·11	1·89	258. 4	254. 37	1·30	25. 9	18. 15	0·80	245. 31	235. 10	0·42	67. 53	54. 4
November	1·70	1·42	270. 56	267. 13	0·92	37. 40	30. 14	0·38	278. 36	267. 28	0·20	85. 57	71. 6
December	1·16	1·14	283. 38	282. 30	0·48	67. 38	65. 23	0·23	304. 29	301. 6	0·23	137. 35	133. 4
For the Year	1·75	1·90	244. 1	244. 1	1·47	37. 18	37. 18	0·57	234. 40	234. 40	0·21	53. 43	53. 43
						HORIZONTAL FORCE.							
January	46·4	30·0	52. 13	54. 31	10·5	280. 41	285. 17	9·3	142. 12	149. 6	3·9	6. 6	15. 18
February	65·1	48·9	64. 32	68. 2	20·5	240. 23	247. 22	8·4	143. 58	154. 27	8·8	3. 33	17. 31
March	107·2	63·5	86. 11	88. 24	30·9	262. 26	266. 52	15·0	109. 52	116. 32	7·2	355. 0	363. 53
April	118·0	72·3	107. 27	107. 32	28·0	283. 13	283. 24	12·7	141. 47	142. 3	5·5	351. 41	352. 3
May	121·0	92·4	124. 46	123. 54	26·0	293. 24	291. 41	5·5	212. 14	209. 39	4·9	102. 44	99. 18
June	97·9	70·6	128. 51	128. 54	26·1	314. 44	314. 50	2·6	233. 28	233. 37	3·1	96. 32	96. 44
July	112·0	73·5	124. 6	125. 27	28·1	319. 43	322. 25	9·0	173. 55	177. 59	6·4	84. 53	90. 18
August	103·3	68·6	111. 7	112. 7	18·4	320. 2	322. 2	14·2	204. 40	207. 40	6·6	50. 33	54. 33
September	128·7	70·5	106. 23	105. 13	26·0	317. 38	315. 17	19·6	188. 54	185. 23	11·5	24. 36	19. 55
October	96·7	60·8	76. 19	72. 52	27·0	283. 50	276. 56	10·5	170. 53	160. 32	10·4	20. 50	7. 1
November	45·4	25·9	65. 54	62. 11	19·5	275. 21	267. 55	8·6	167. 4	155. 56	7·7	35. 56	21. 5
December	28·0	11·0	23. 48	22. 40	6·0	0. 48	358. 33	14·5	222. 51	219. 28	7·3	57. 41	53. 10
For the Year	80·7	52·0	101. 39	101. 39	20·0	292. 31	292. 31	8·9	172. 49	172. 49	5·9	32. 54	32. 54
						VERTICAL FORCE.							
January	11·8	8·3	177. 14	179. 32	8·9	241. 59	246. 35	0·7	63. 44	70. 38	0·1	270. 0	279. 12
February	17·7	14·8	172. 6	175. 36	11·6	252. 7	259. 6	3·9	63. 26	73. 55	0·4	199. 14	213. 12
March	24·6	10·8	162. 28	164. 41	13·1	259. 11	263. 37	4·6	75. 53	82. 33	2·1	243. 20	252. 13
April	39·0	14·5	121. 19	121. 24	16·7	257. 9	257. 20	6·2	89. 41	89. 57	2·3	284. 20	284. 42
May	40·6	16·3	120. 41	119. 49	17·2	256. 13	254. 30	5·9	108. 5	105. 30	1·8	301. 25	297. 59
June	34·0	13·8	119. 32	119. 35	14·2	259. 52	259. 58	3·9	94. 4	94. 13	1·0	201. 43	201. 55
July	30·1	11·7	125. 33	126. 54	15·6	256. 47	259. 29	4·8	91. 59	96. 3	1·2	174. 10	179. 35
August	32·5	9·9	118. 57	119. 57	14·7	269. 3	271. 3	6·5	102. 57	105. 57	1·5	246. 40	250. 40
September	27·1	6·5	94. 35	93. 25	11·0	262. 0	259. 39	6·2	100. 26	96. 55	1·7	307. 6	302. 25
October	19·5	12·1	155. 52	152. 25	7·9	257. 56	251. 2	4·4	112. 33	102. 12	2·1	316. 7	302. 18
November	9·6	4·8	166. 40	162. 57	4·9	276. 13	268. 47	2·2	130. 11	119. 3	0·7	10. 53	356. 2
December	5·7	3·8	216. 31	215. 23	2·3	225. 27	223. 12	1·2	327. 30	324. 7	1·0	107. 39	103. 8
For the Year	23·1	9·4	140. 5	140. 5	11·4	257. 56	257. 56	3·9	94. 37	94. 37	0·8	272. 14	272. 14

TABLE XVII.—RESULTS of OBSERVATIONS of MAGNETIC DIP made in the MAGNETIC PAVILION in the YEAR 1911.

Greenwich Civil Time, 1911.	3-inch Needle.	Magnetic Dip.	Observer.	Greenwich Civil Time, 1911.	3-inch Needle.	Magnetic Dip.	Observer.	Greenwich Civil Time, 1911.	3-inch Needle.	Magnetic Dip.	Observer.
d h		° ′ ″		d h		° ′ ″		d h		° ′ ″	
Jan. 2. 12	D_1	66. 52. 39	E	May 1. 15	D_1	66. 49. 59	E	Sept. 1. 12	D_1	66. 51. 54	E
4. 12	D_2	66. 52. 43	E	4. 12	D_2	66. 51. 3	E	4. 13	D_2	66. 50. 45	E
6. 12	D_1	66. 54. 23	E	8. 13	D_1	66. 50. 4	E	7. 12	D_1	66. 52. 26	E
9. 12	D_2	66. 50. 28	E	10. 12	D_2	66. 52. 49	E	8. 12	D_2	66. 52. 2	E
11. 12	D_1	66. 54. 27	E	12. 12	D_1	66. 53. 55	E	11. 12	D_1	66. 54. 25	E
13. 12	D_2	66. 54. 21	E	15. 12	D_2	66. 50. 11	E	14. 12	D_2	66. 51. 15	E
17. 15	D_2	66. 52. 16	B	17. 13	D_2	66. 50. 11	B	18. 12	D_2	66. 49. 11	B
19. 11	D_1	66. 53. 47	B	20. 11	D_1	66. 51. 48	B	20. 12	D_1	66. 53. 27	B
23. 12	D_2	66. 51. 23	B	23. 12	D_2	66. 51. 14	B	22. 12	D_2	66. 50. 29	B
26. 12	D_1	66. 53. 41	B	24. 12	D_1	66. 51. 53	B	25. 12	D_1	66. 53. 2	B
27. 15	D_2	66. 52. 30	B	26. 12	D_2	66. 48. 53	B	27. 13	D_2	66. 51. 18	B
30. 12	D_1	66. 52. 46	B	29. 12	D_1	66. 51. 42	B	29. 13	D_1	66. 51. 49	B
Feb. 1. 12	D_1	66. 53. 5	B	June 2. 13	D_1	66. 51. 59	B	Oct. 3. 13	D_1	66. 53. 30	B
4. 12	D_2	66. 51. 48	B	3. 12	D_2	66. 52. 25	B	4. 13	D_2	66. 50. 15	B
6. 12	D_1	66. 52. 42	B	7. 12	D_1	66. 53. 15	B	6. 13	D_1	66. 52. 37	B
8. 13	D_2	66. 53. 22	B	8. 12	D_2	66. 53. 35	B	9. 12	D_2	66. 53. 54	B
10. 13	D_1	66. 51. 40	B	12. 13	D_1	66. 51. 33	B	11. 13	D_1	66. 54. 33	B
14. 12	D_2	66. 52. 42	B	14. 13	D_2	66. 51. 58	B	13. 12	D_2	66. 51. 1	B
15. 12	D_2	66. 52. 14	E	16. 12	D_2	66. 47. 29	E	17. 12	D_2	66. 50. 25	E
17. 12	D_1	66. 54. 2	E	19. 12	D_1	66. 52. 41	E	19. 12	D_1	66. 55. 1	E
20. 12	D_2	66. 54. 53	E	21. 12	D_2	66. 51. 10	E	23. 12	D_2	66. 51. 23	E
22. 12	D_1	66. 54. 25	E	26. 12	D_1	66. 50. 42	E	25. 12	D_1	66. 51. 28	E
24. 12	D_2	66. 54. 22	E	28. 12	D_2	66. 50. 40	E	27. 12	D_2	66. 50. 2	E
27. 12	D_1	66. 52. 38	E	30. 12	D_1	66. 52. 42	E	30. 12	D_1	66. 52. 21	E
Mar. 2. 12	D_1	66. 52. 39	E	July 4. 12	D_1	66. 50. 26	E	Nov. 1. 12	D_1	66. 53. 31	E
6. 12	D_2	66. 51. 43	E	5. 12	D_2	66. 49. 42	E	3. 12	D_2	66. 49. 17	E
7. 12	D_1	66. 52. 55	E	7. 12	D_1	66. 52. 59	E	7. 12	D_1	66. 52. 0	E
9. 12	D_2	66. 53. 15	E	10. 12	D_2	66. 52. 43	E	10. 12	D_2	66. 51. 59	E
13. 12	D_1	66. 52. 32	E	12. 12	D_1	66. 53. 21	E	13. 13	D_1	66. 54. 47	E
15. 12	D_2	66. 52. 9	E	14. 12	D_2	66. 49. 44	E	14. 11	D_2	66. 52. 7	E
17. 12	D_2	66. 51. 2	B	17. 13	D_2	66. 48. 45	B	16. 13	D_2	66. 52. 31	E
20. 15	D_1	66. 55. 24	B	18. 13	D_1	66. 53. 16	B	19. 12	D_1	66. 53. 45	E
22. 12	D_2	66. 52. 7	B	21. 13	D_2	66. 49. 0	B	22. 12	D_2	66. 49. 48	E
25. 13	D_1	66. 54. 13	B	24. 13	D_1	66. 49. 8	B	24. 12	D_1	66. 52. 12	E
28. 12	D_2	66. 50. 2	B	26. 12	D_2	66. 51. 46	B	27. 15	D_2	66. 50. 18	C
30. 12	D_1	66. 52. 43	B	28. 12	D_1	66. 53. 13	B	29. 13	D_1	66. 56. 12	C
Apr. 3. 13	D_1	66. 52. 7	B	Aug. 1. 12	D_1	66. 53. 56	B	Dec. 4. 12	D_1	66. 53. 7	E
5. 15	D_2	66. 52. 26	B	3. 12	D_2	66. 49. 42	B	6. 12	D_2	66. 51. 17	E
7. 12	D_1	66. 52. 15	B	5. 13	D_1	66. 51. 43	B	8. 11	D_1	66. 53. 3	E
10. 13	D_2	66. 53. 59	B	8. 12	D_2	66. 48. 42	B	11. 13	D_2	66. 52. 9	C
12. 13	D_1	66. 54. 25	B	11. 12	D_1	66. 51. 9	B	13. 11	D_1	66. 53. 22	C
13. 13	D_2	66. 51. 44	B	14. 12	D_2	66. 49. 20	B	14. 15	D_2	66. 50. 17	C
18. 12	D_2	66. 52. 34	E	16. 12	D_2	66. 48. 19	E	18. 13	D_2	66. 51. 55	E
19. 12	D_1	66. 52. 21	E	18. 12	D_1	66. 51. 32	E	20. 11	D_1	66. 53. 37	C
21. 12	D_2	66. 53. 25	E	21. 15	D_2	66. 51. 32	E	22. 12	D_2	66. 49. 54	E
24. 12	D_1	66. 51. 10	E	24. 12	D_1	66. 53. 12	E	27. 11	D_1	66. 55. 4	E
26. 12	D_2	66. 50. 50	E	28. 12	D_2	66. 53. 41	E	27. 15	D_2	66. 54. 4	E
28. 12	D_1	66. 50. 32	E	30. 12	D_1	66. 52. 31	E	29. 12	D_1	66. 53. 12	E

The initials C, B and E are those of Messrs Chapman, Bryant and Edney respectively.

TABLE XVIII.—MONTHLY and YEARLY MEANS of MAGNETIC DIP from OBSERVATIONS made in the YEAR 1911.

Monthly Means of Magnetic Dip.

Month, 1911.	D_1, 3-inch Needle.	Number of Observations.	D_2, 3-inch Needle.	Number of Observations.
January	66° 53′ 30″	6	66° 52′ 17″	6
February	66. 53. 5	6	66. 53. 14	6
March	66. 53. 24	6	66. 51. 43	6
April	66. 52. 8	6	66. 52. 30	6
May	66. 51. 33	6	66. 50. 44	6
June	66. 52. 9	6	66. 51. 13	6
July	66. 52. 4	6	66. 50. 17	6
August	66. 52. 20	6	66. 50. 13	6
September	66. 52. 50	6	66. 50. 50	6
October	66. 53. 15	6	66. 51. 10	6
November	66. 53. 44	6	66. 51. 0	6
December	66. 53. 34	6	66. 51. 36	6
Means	66° 52′ 48″	Sum 72	66° 51′ 24″	Sum 72
Mean Annual Dip	66° 52′ 6″			

The monthly means have been formed without reference to the hour at which the observation on each day was made.
In combining the monthly results, to form annual means, weights have been given proportional to the number of observations.

TABLE XIX.—DETERMINATIONS of the ABSOLUTE VALUE of HORIZONTAL MAGNETIC FORCE in the YEAR 1911.

Abstract of the Observations of Deflection of a Magnet for Absolute Measure of Horizontal Force made with the Gibson Instrument in the Magnetic Pavilion.

Greenwich Civil Time, 1911.	Distances of Centres of Magnets.	Temperature Fahrenheit.	Observed Deflexion.	Mean of the Times of Vibration of Deflecting Magnet.	Number of Vibrations.	Temperature Fahrenheit.	Observer.
d h	ft.	°	° ′ ″	s		°	
January 6. 13	1·0 1·3	45·4	9. 37. 20 4. 22. 10	5·809 5·810	100 100	46·2 46·9	E
January 24. 13	1·0 1·3	45·8	9. 36. 53 4. 22. 3	5·811 5·810	100 100	45·2 45·4	B
February 7. 15	1·0 1·3	44·4	9. 36. 28 4. 21. 33	5·813 5·807	100 100	44·7 45·1	B
February 21. 15	1·0 1·3	48·0	9. 38. 41 4. 22. 50	5·814 5·815	100 100	48·8 49·9	E
March 7. 15	1·0 1·3	49·2	9. 36. 56 4. 21. 54	5·810 5·813	100 100	49·8 51·1	E
March 22. 15	1·0 1·3	58·6	9. 35. 28 4. 21. 10	5·817 5·817	100 100	58·9 60·3	B
April 6. 15	1·0 1·3	40·5	9. 37. 0 4. 22. 8	5·806 5·804	100 100	40·7 41·5	B
April 24. 15	1·0 1·3	59·9	9. 34. 54 4. 20. 59	5·814 5·817	100 100	61·0 63·0	E
May 8. 12	1·0 1·3	60·5	9. 35. 13 4. 21. 11	5·819 5·821	100 100	61·8 64·2	E
May 23. 15	1·0 1·3	65·8	9. 33. 40 4. 20. 28	5·818 5·818	100 100	66·7 67·9	B
June 7. 15	1·0 1·3	72·1	9. 32. 55 4. 20. 15	5·819 5·821	100 100	71·6 76·9	B
June 21. 15	1·0 1·3	65·7	9. 34. 0 4. 20. 45	5·815 5·819	100 100	66·4 67·5	E
July 7. 15	1·0 1·3	81·1	9. 31. 3 4. 19. 21	5·823 5·824	100 100	82·9 85·3	E
July 22. 12	1·0 1·3	82·9	9. 32. 33 4. 19. 53	5·829 5·831	100 100	80·9 83·3	B
August 8. 15	1·0 1·3	84·7	9. 31. 28 4. 19. 30	5·826 5·828	100 100	84·1 85·1	B
August 24. 15	1·0 1·3	71·2	9. 33. 9 4. 20. 16	5·826 5·824	100 100	72·8 72·8	E
September 7. 15	1·0 1·3	77·2	9. 32. 23 4. 19. 56	5·826 5·827	100 100	79·2 81·1	E
September 22. 15	1·0 1·3	59·6	9. 35. 3 4. 21. 3	5·817 5·819	100 100	58·8 59·6	B
October 9. 15	1·0 1·3	54·9	9. 35. 28 4. 21. 25	5·819 5·819	100 100	54·5 55·1	B
October 23. 15	1·0 1·3	57·0	9. 34. 24 4. 20. 51	5·820 5·821	100 100	57·3 58·2	E
November 7. 15	1·0 1·3	50·7	9. 35. 18 4. 21. 15	5·816 5·817	100 100	51·4 52·5	E
November 23. 15	1·0 1·3	42·5	9. 35. 43 4. 21. 26	5·813 5·814	100 100	43·5 44·9	E
December 8. 13	1·0 1·3	45·2	9. 35. 40 4. 21. 28	5·815 5·815	100 100	46·2 47·1	E
December 22. 13	1·0 1·3	47·5	9. 35. 8 4. 21. 11	5·817 5·815	100 100	48·1 48·7	E

The deflecting magnet is placed on the east side of the suspended magnet, with its marked pole alternately east and west, and on the west side with its marked pole also alternately east and west: the deflection given in the table above is the mean of the four deflections observed in these positions of the magnets.

The initials B and E are those of Mr. Bryant and Mr. Edney.

In the subsequent calculations every observation is reduced to the temperature 35° Fahrenheit.

TABLE XIX.—*continued*—COMPUTATION of the VALUES of HORIZONTAL FORCE in ABSOLUTE MEASURE.

From Observations made with the Gibson Instrument in the Magnetic Pavilion.

Greenwich Civil Time, 1911.	In British Units.									In C. G. S. Units.	
	Apparent Value of A_1.	Apparent Value of A_2.	Apparent Value of P.	Mean Value of P.	Log. $\frac{m}{X}$.	Corrected Time of Vibration of Deflecting Magnet.	Log. $m\,X$.	Value of m.	Value of Horizontal Force X.	Value of Horizontal Force. As observed.	Value of Horizontal Force. Reduced to Mean of Month.
d h						s					
Jan. 6. 13	0·08371	0·08382	−0·00316		8·92416	5·8163	0·13153	0·3372	4·0150	·18512	·18528
Jan. 24. 13	0·08365	0·08379	0·00400		8·92392	5·8166	0·13148	0·3371	4·0159	·18517	·18528
Feb. 7. 15	0·08357	0·08361	0·00107		8·92326	5·8167	0·13145	0·3368	4·0188	·18530	·18531
Feb. 21. 15	0·08394	0·08407	0·00378		8·92541	5·8202	0·13096	0·3374	4·0066	·18474	·18504
Mar. 7. 15	0·08371	0·08379	0·00231		8·92408	5·8175	0·13136	0·3371	4·0146	·18511	·18513
Mar. 22. 15	0·08363	0·08369	0·00180		8·92362	5·8185	0·13128	0·3369	4·0163	·18519	·18518
Apr. 6. 15	0·08359	0·08374	0·00423		8·92367	5·8153	0·13164	0·3370	4·0178	·18525	·18543
Apr. 24. 15	0·08357	0·08365	0·00237		8·92336	5·8174	0·13145	0·3368	4·0183	·18528	·18531
May 8. 12	0·08362	0·08372	0·00305		8·92369	5·8214	0·13085	0·3367	4·0140	·18508	·18555
May 23. 15	0·08348	0·08357	0·00271		8·92291	5·8174	0·13148	0·3367	4·0205	·18538	·18532
June 7. 15	0·08346	0·08359	0·00389		8·92294	5·8163	0·13169	0·3368	4·0214	·18542	·18538
June 21. 15	0·08352	0·08366	0·00400	−0·00311	8·92326	5·8173	0·13149	0·3368	4·0190	·18531	·18542
July 7. 15	0·08333	0·08344	0·00344		8·92220	5·8155	0·13185	0·3365	4·0255	·18561	·18529
July 22. 12	0·08357	0·08364	0·00203		8·92334	5·8238	0·13063	0·3365	4·0146	·18511	·18528
Aug. 8. 15	0·08344	0·08354	0·00305		8·92276	5·8195	0·13129	0·3365	4·0204	·18537	·18533
Aug. 24. 15	0·08348	0·08359	0·00316		8·92297	5·8227	0·13072	0·3364	4·0168	·18521	·18528
Sept. 7. 15	0·08346	0·08357	0·00327		8·92287	5·8209	0·13103	0·3365	4·0186	·18529	·18518
Sept. 22. 15	0·08358	0·08366	0·00231		8·92344	5·8220	0·13077	0·3366	4·0148	·18512	·18538
Oct. 9. 15	0·08357	0·08371	0·00412		8·92355	5·8243	0·13039	0·3365	4·0125	·18501	·18527
Oct. 23. 15	0·08345	0·08357	0·00338		8·92284	5·8223	0·13070	0·3363	4·0173	·18523	·18518
Nov. 7. 15	0·08349	0·08360	0·00316		8·92304	5·8212	0·13082	0·3365	4·0169	·18521	·18530
Nov. 23. 15	0·08343	0·08354	0·00327		8·92274	5·8212	0·13078	0·3363	4·0181	·18527	·18532
Dec. 8. 13	0·08347	0·08359	0·00361		8·92295	5·8214	0·13076	0·3364	4·0170	·18522	·18533
Dec. 22. 13	0·08342	0·08354	−0·00338		8·92269	5·8212	0·13081	0·3363	4·0185	·18528	·18516
Means	...	...	...	...	...	...	...	...	4·0170	·18522	·18529

The value of X in British Units is referred to the Foot-Grain-Second Unit.

MONTHLY MEAN DIURNAL INEQUALITIES OF MAGNETIC ELEMENTS FROM HOURLY ORDINATES, ON FIVE SELECTED DAYS, IN EACH MONTH.

Each result is the mean of the corresponding hourly ordinates from the photographic register, on five quiet days in each month, selected for comparison with results at other British Observatories. The days included are January 7, 12, 17, 20, 21, February 11, 12, 15, 19, 20, March 10, 11, 12, 17, 18, April 5, 13, 14, 15, 26, May 1, 4, 13, 22, 24, June 3, 17, 18, 19, 25, July 13, 14, 15, 16, 26, August 7, 8, 10, 11, 29, September 2, 3, 14, 25, 26, October 1, 5, 15, 23, 28, November 1, 7, 22, 23, 24, December 2, 9, 21, 22, 23.

The results for Declination are given in minutes of arc: those for Horizontal Force and Vertical Force are given both in terms of the whole Horizontal or Vertical Force and in terms of the C. G. S. Unit. The letter *f* indicates values in terms of the whole Horizontal or Vertical Force, and the letter *m* values in terms of the C. G. S. Unit, the unit for the former values being ·00001 of the whole Horizontal or Vertical Force, and for the latter ·000001 of the C. G. S. Unit. The values of the whole Horizontal and Vertical Forces expressed in terms of the C. G. S. Unit are ·18529 and ·43374 respectively for the year.

TABLE XX.—MONTHLY MEAN DIURNAL INEQUALITY of MAGNETIC DECLINATION WEST.

(*The results in each case are diminished by the smallest hourly value.*)

1911.

Hour, Greenwich Civil Time.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	For the Year.
Midnight.	0·6	0·9	3·5	3·3	2·2	2·7	3·9	3·4	2·7	0·6	0·6	0·9	1·74
1h	1·0	1·3	3·6	3·6	2·3	2·9	3·7	3·6	2·5	0·9	1·0	0·8	1·90
2	1·0	2·0	3·7	3·7	2·7	3·1	3·5	3·5	2·4	1·1	0·9	1·1	2·02
3	1·3	1·8	3·2	3·6	2·7	2·3	3·6	3·0	2·1	1·1	0·9	1·1	1·86
4	1·6	1·5	3·2	3·3	2·6	2·0	3·2	2·6	1·9	1·4	0·8	1·2	1·74
5	1·3	1·3	3·2	2·7	1·7	0·9	1·9	1·6	1·7	1·5	0·6	0·9	1·24
6	1·5	1·4	3·1	2·3	1·2	0·0	1·3	0·9	1·1	1·3	0·5	0·7	0·90
7	1·3	1·6	2·7	1·0	0·4	0·4	0·8	0·0	0·4	1·2	0·2	0·5	0·51
8	1·0	1·0	1·1	0·0	0·0	0·6	0·0	0·0	0·0	0·0	0·1	0·6	0·00
9	0·9	0·2	0·0	0·0	1·1	1·3	1·1	1·3	0·6	0·1	0·4	1·2	0·31
10	1·4	0·2	1·1	1·9	2·9	3·3	3·0	2·8	2·5	1·6	1·6	2·1	1·66
11	1·9	1·4	2·8	5·1	5·3	5·2	5·7	4·7	4·8	3·5	2·5	2·5	3·41
Noon.	3·0	2·9	5·3	7·7	7·3	6·5	8·3	7·3	6·8	4·7	3·0	2·5	5·07
13h	3·5	4·0	7·4	8·4	7·8	7·0	9·5	8·8	7·8	5·2	3·1	2·0	5·84
14	2·9	4·0	7·9	7·5	7·6	7·4	10·3	8·9	6·8	4·6	2·1	1·1	5·55
15	2·3	3·5	7·1	5·6	6·8	6·9	9·3	7·6	5·1	3·6	1·0	0·7	4·59
16	1·6	2·6	5·4	4·3	5·9	5·7	7·8	5·5	3·7	2·5	1·1	1·0	3·56
17	1·4	2·3	4·2	3·6	5·2	4·9	6·1	4·1	3·0	1·9	1·0	1·0	2·85
18	1·8	1·5	3·6	3·2	4·5	4·6	4·5	3·7	3·1	1·8	0·5	0·6	2·41
19	1·3	1·4	3·2	3·1	4·1	4·1	4·2	3·7	2·8	1·6	0·2	0·6	2·16
20	0·8	1·4	3·1	3·1	3·8	3·8	4·1	3·6	2·8	1·4	0·2	0·3	2·00
21	0·5	0·6	2·8	3·1	3·5	3·6	4·2	3·4	2·7	1·2	0·0	0·2	1·78
22	0·4	0·1	3·0	3·0	3·4	3·5	3·8	3·4	2·6	1·1	0·1	0·0	1·66
23	0·1	0·0	3·1	2·9	3·2	3·3	4·0	3·6	2·3	1·0	0·1	0·3	1·62
24	0·0	0·4	3·3	3·4	3·2	3·1	4·0	3·9	2·4	1·0	0·3	0·5	1·76
Means 0^h–23^h	1·43	1·62	3·64	3·58	3·68	3·58	4·49	3·79	3·01	1·87	0·94	1·00	2·35
Means 1^h–24^h	1·41	1·60	3·63	3·59	3·72	3·60	4·50	3·81	3·00	1·89	0·92	0·98	2·35

TABLE XXI.—MONTHLY MEAN DIURNAL INEQUALITY of HORIZONTAL MAGNETIC FORCE.

(The results are corrected for temperature, and in each case diminished by the smallest hourly value.)

1911.

Hour, Greenwich Civil Time.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		For the Year.	
	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m
Midn.	74	137	102	189	137	254	149	276	77	143	87	161	136	252	141	261	177	328	139	258	55	102	46	85	101·0	187·1
1h	74	137	100	185	146	271	150	278	76	141	78	145	136	252	139	258	179	332	129	239	63	117	49	91	100·9	187·1
2	73	135	103	191	146	271	144	267	82	152	80	148	119	220	141	261	168	311	134	248	56	104	55	102	99·4	184·1
3	79	146	100	185	134	248	149	276	73	135	70	130	105	195	132	245	170	315	131	243	64	119	56	104	96·3	178·4
4	78	145	96	178	137	254	143	265	78	145	73	135	115	213	132	245	170	315	137	254	73	135	59	109	98·6	182·7
5	86	159	103	191	140	259	142	263	62	115	79	146	112	208	124	230	161	298	147	272	77	143	63	117	99·0	183·4
6	79	146	104	193	142	263	141	261	45	83	66	122	106	196	101	187	155	287	142	263	75	139	68	126	93·0	172·1
7	79	146	104	193	149	276	117	217	33	61	44	82	91	169	91	169	121	224	130	241	69	128	58	107	81·5	151·1
8	62	115	108	200	137	254	95	176	10	19	12	22	47	87	40	74	88	163	110	204	39	72	30	56	55·8	103·5
9	46	85	82	152	101	187	57	106	4	7	0	0	17	31	10	19	32	59	59	109	15	28	6	11	26·7	49·5
10	38	70	58	107	55	102	11	20	3	6	2	4	0	0	0	0	0	0	14	26	6	11	0	0	6·6	12·1
11	22	41	28	52	11	20	0	0	0	0	20	37	10	19	0	0	7	13	0	0	0	0	10	19	0·0	0·0
Noon.	0	0	18	33	0	0	5	9	24	44	42	78	34	63	24	44	51	94	0	0	6	11	37	69	11·1	20·4
13h	29	54	10	19	31	57	52	96	54	100	50	93	83	154	57	106	97	180	25	46	22	41	61	113	38·6	71·6
14	47	87	9	17	56	104	86	159	69	128	64	119	111	206	92	170	137	254	55	102	43	80	71	132	61·0	113·1
15	45	83	10	19	79	146	105	195	104	193	92	170	144	267	105	195	152	282	68	126	39	72	56	104	74·3	137·6
16	48	89	0	0	106	196	113	209	116	215	105	195	172	319	105	195	160	296	77	143	45	83	48	89	82·2	152·4
17	54	100	10	19	109	202	123	228	152	282	127	235	178	330	133	246	156	289	89	165	58	107	55	102	94·7	175·4
18	67	124	34	63	120	222	119	220	177	328	147	272	182	337	145	269	168	311	117	217	64	119	61	113	107·8	199·5
19	66	122	49	91	136	252	143	265	193	358	135	250	176	326	168	311	187	346	121	224	74	137	65	120	117·1	216·8
20	71	132	46	85	136	252	155	287	192	356	146	271	182	337	168	311	201	372	115	213	70	130	51	94	118·7	220·0
21	75	139	52	96	134	248	158	293	188	348	138	256	174	322	159	295	193	358	123	228	66	122	33	61	115·4	213·8
22	72	133	62	115	139	258	171	317	186	345	140	259	174	322	149	276	189	350	121	224	60	111	29	54	115·3	213·6
23	75	139	64	119	137	254	163	302	184	341	138	256	168	311	145	269	185	343	121	224	59	109	19	35	112·5	208·5
24	82	152	74	137	128	237	156	289	181	335	142	263	163	302	153	283	189	350	127	235	59	109	29	54	114·6	212·1
Means. 0h–23h	60·0	111·0	60·5	112·2	109·1	202·1	112·1	207·7	90·9	168·5	80·6	149·4	115·5	214·0	104·2	193·2	137·7	255·0	96·0	177·9	49·9	92·5	45·3	83·9	79·5	147·2
1h–24h	60·3	111·6	59·3	110·0	108·7	201·4	112·4	208·3	95·3	176·5	82·9	153·7	116·6	216·1	104·7	194·1	138·2	255·9	95·5	176·9	50·1	92·8	44·5	82·6	80·0	148·3

TABLE XXII.—MONTHLY MEAN DIURNAL INEQUALITY of VERTICAL MAGNETIC FORCE.

(The results are corrected for temperature, and in each case diminished by the smallest hourly value.)

1911.

Hour, Greenwich Civil Time.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		For the Year.	
	f	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*
Midn.	9	39	21	91	29	126	53	230	56	243	43	187	38	165	34	147	33	143	22	95	20	87	4	17	27·7	120·0
1^h	3	13	22	95	27	117	53	230	54	234	39	169	34	147	28	121	31	134	16	69	12	52	2	9	24·2	105·0
2	7	30	24	104	25	108	52	226	58	252	38	165	34	147	28	121	32	139	18	78	8	35	4	17	24·8	107·7
3	10	43	16	69	30	130	58	252	61	265	42	182	36	156	30	130	34	147	20	87	10	43	4	17	26·8	116·0
4	12	52	22	95	28	121	58	252	65	282	48	208	40	173	34	147	38	165	20	87	12	52	9	39	29·7	128·6
5	14	61	26	113	30	130	62	269	67	291	48	208	45	195	36	156	40	173	22	95	10	43	11	48	31·7	137·7
6	18	78	26	113	35	152	64	278	71	308	42	182	49	213	44	191	44	191	19	82	10	43	7	30	33·3	144·3
7	20	87	24	104	35	152	64	278	69	299	38	165	53	230	44	191	48	208	23	100	8	35	9	39	33·7	146·5
8	18	78	26	113	43	187	64	278	63	273	36	156	47	204	38	165	46	200	25	108	4	17	11	48	32·6	141·5
9	18	78	24	104	35	152	50	217	47	204	24	104	39	169	24	104	32	139	23	100	4	17	13	56	25·3	109·5
10	16	69	14	61	21	91	32	139	23	100	16	69	23	100	8	35	20	87	1	4	4	17	15	65	13·6	59·0
11	12	52	6	26	9	39	14	61	9	39	10	43	9	39	0	0	10	43	0	0	0	0	13	56	5·2	22·4
Noon.	6	26	0	0	0	0	0	0	4	17	0	0	1	4	0	0	0	0	10	43	4	17	5	22	0·0	0·0
13^h	0	0	8	35	0	0	4	17	0	0	10	43	0	0	0	0	6	26	6	26	6	26	5	22	1·2	5·5
14	12	52	12	52	3	13	25	108	16	69	22	95	14	61	12	52	16	69	4	17	14	61	9	39	10·8	46·5
15	14	61	17	74	11	48	39	169	20	87	32	139	26	113	28	121	22	95	10	43	14	61	4	17	17·2	74·9
16	18	78	23	100	23	100	47	204	34	147	44	191	34	147	38	165	30	130	16	69	16	69	4	17	24·8	107·3
17	22	95	27	117	27	117	49	213	37	160	52	226	46	200	39	169	32	139	16	69	14	61	4	17	27·9	121·1
18	26	113	31	134	21	91	53	230	46	200	58	252	48	208	37	160	30	130	16	69	12	52	6	26	29·5	128·0
19	24	104	42	182	27	117	51	221	48	208	56	243	44	191	29	126	31	134	18	78	14	61	2	9	29·7	128·7
20	22	95	40	173	23	100	55	239	46	200	50	217	32	139	33	143	31	134	20	87	10	43	4	17	28·0	121·5
21	20	87	40	173	23	100	53	230	50	217	50	217	32	139	31	134	31	134	20	87	9	39	2	9	27·6	119·7
22	14	61	38	165	23	100	47	204	52	226	48	208	28	121	29	126	27	117	20	87	9	39	2	9	25·6	111·1
23	8	35	34	147	27	117	51	221	50	217	44	191	32	139	31	134	29	126	20	87	7	30	0	0	25·2	109·5
24	8	35	32	139	33	143	58	252	52	226	44	191	34	147	33	143	32	139	18	78	11	48	4	17	27·4	119·0
Means 0^h–23^h	14·3	62·0	23·5	101·7	23·1	100·3	45·7	198·6	43·6	189·1	37·1	160·8	32·7	141·7	27·3	118·2	28·9	125·1	16·0	69·5	9·6	41·7	6·2	26·9	23·2	100·5
1^h–24^h	14·3	61·8	23·9	103·7	23·3	101·0	46·0	199·5	43·4	188·4	37·1	161·0	32·5	140·9	27·2	118·1	28·8	125·0	15·9	68·7	9·3	40·0	6·2	26·9	23·2	100·5

ROYAL OBSERVATORY, GREENWICH.

MAGNETIC DISTURBANCES.

1911.

MAGNETIC DISTURBANCES in DECLINATION, HORIZONTAL FORCE, and VERTICAL FORCE, recorded at the ROYAL OBSERVATORY, GREENWICH, in the Year 1911.

The following notes give a brief description of all magnetic movements (superposed on the ordinary diurnal movement) exceeding 3′ in Declination, 0·0010 in Horizontal Force, or 0·0003 in Vertical Force, as taken from the photographic records of the respective Magnetometers. The movements in Horizontal and Vertical Force are expressed in parts of the whole Horizontal and Vertical Forces respectively. When any one of the three elements is not specifically mentioned, it is to be understood that the movement, if any, was insignificant. Any failure or want of register is specially indicated.

The term "wave" is used to indicate a movement in one direction and return; "double wave" a movement in one direction and return with continuation in the opposite direction and return; "two successive waves" consecutive wave movements in the same direction; "fluctuations" a number of movements in both directions. The extent and direction of the movement are indicated in brackets, + denoting an increase, and − a decrease of the magnetic element. In the case of fluctuations the sign ± denotes positive and negative movements of generally equal extent.

Magnetic movements which do not admit of brief description in this way are exhibited on accompanying plates.

The time is Greenwich Civil Time (commencing at midnight, and counting the hours from 0 to 24).

1911.

January 1^{d} $20\frac{3}{4}^{h}$ to 22^{h} Irregular double-crested wave in Dec. (− 6′); irregular wave in H.F. (+ ·0033).

2^{d} $2\frac{1}{4}^{h}$ to 3^{h} Wave in Dec. (+ 3′). $15\frac{1}{4}^{h}$ to 16^{h} Wave in Dec. (+ 3′), steep at end. 16^{h} to 17^{h} Wave in H.F. (− ·0016), followed till 18^{h} by a sharp double-crested wave (− ·0025). $16\frac{1}{2}^{h}$ to 17^{h} Sharp wave in Dec. (− 5′), followed till $18\frac{1}{2}^{h}$ by another sharp wave (− 11′). $21\frac{1}{4}^{h}$ to 22^{h} Irregular wave in H.F. (+ ·0016), with sudden commencement. $21\frac{1}{2}^{h}$ to 22^{h} Irregular wave in Dec. (+ 5′). $22\frac{1}{4}^{h}$ to 23^{h} Wave in H.F. (− ·0010). 2^{d} 23^{h} to 3^{d} 1^{h} Irregular triple wave in Dec. (+ 3′, − 6′, + 5′).

3^{d} 0^{h} to $0\frac{3}{4}^{h}$ Sharp wave in H.F. (+ ·0030). $0\frac{1}{4}^{h}$ to 1^{h} Decrease in V.F. (− ·0003). $2\frac{1}{2}^{h}$ to $3\frac{3}{4}^{h}$ Truncated wave in Dec. (− 4′). 3^{h} to $4\frac{1}{2}^{h}$ Truncated wave in H.F. (− ·0010). $10\frac{3}{4}^{h}$ to $12\frac{3}{4}^{h}$ Irregular wave in H.F. (− ·0020). 14^{h} to 15^{h} Wave in Dec. (− 3′). $14\frac{3}{4}^{h}$ to $15\frac{3}{4}^{h}$ Wave in H.F. (− ·0012). $15\frac{3}{4}^{h}$ to 17^{h} Wave in Dec. (− 4′). $17\frac{3}{4}^{h}$ to 20^{h} Irregular triple-crested wave in Dec. (− 10′). 18^{h} to $19\frac{3}{4}^{h}$ Wave in H.F. (+ ·0027). $22\frac{1}{2}^{h}$ to $23\frac{1}{2}^{h}$ Truncated wave in H.F. (− ·0015).

4^{d} $17\frac{3}{4}^{h}$ to $18\frac{1}{4}^{h}$ Sharp wave in Dec. (− 6′): sharp increase in H.F. (+ ·0020), followed by slower partial return (− ·0010).

5^{d} $16\frac{3}{4}^{h}$ to 18^{h} Sharp wave in Dec. (− 13′): double wave in H.F. (− ·0014 to + ·0021). $21\frac{1}{4}^{h}$ to $22\frac{3}{4}^{h}$ Slow wave in Dec. (− 4′). $21\frac{3}{4}^{h}$ to $23\frac{3}{4}^{h}$ Irregular double-crested wave in H.F. (− ·0022). $23\frac{1}{4}^{h}$ to $23\frac{3}{4}^{h}$ Sharp increase in Dec. (+ 9′).

6^{d} $12\frac{1}{2}^{h}$ to $13\frac{3}{4}^{h}$ Wave in H.F. (− ·0012). 16^{h} to 18^{h} Double-crested wave in H.F. (− ·0016), followed till 20^{h} by a truncated wave (− ·0013). $16\frac{3}{4}^{h}$ to 19^{h} Irregular wave in Dec. (− 10′), steep at commencement. $19\frac{1}{4}^{h}$ to $20\frac{1}{4}^{h}$ Wave in Dec. (− 4′). $20\frac{1}{4}^{h}$ to 22^{h} Irregular wave in H.F. (+ ·0022). $20\frac{3}{4}^{h}$ to $21\frac{1}{4}^{h}$ Wave in Dec. (− 3′).

8^{d} $17\frac{1}{4}^{h}$ to $20\frac{1}{4}^{h}$ Irregular double wave in Dec. (+ 3′ to − 5′), followed till $22\frac{3}{4}^{h}$ by a sharp irregular triple-crested wave (− 16′). 19^{h} to $22\frac{1}{4}^{h}$ Irregular double-crested wave in V.F. (+ ·0004). $20\frac{1}{4}^{h}$ to $23\frac{1}{2}^{h}$ Irregular quintuple wave in H.F. (− ·0013, + ·0022, − ·0008, + ·0028, − ·0010).

9^{d} 16^{h} to $17\frac{3}{4}^{h}$ Truncated wave in Dec. (− 10′). 16^{h} to 19^{h} Irregular triple wave in H.F. (− ·0010, + ·0011, − ·0013). $18\frac{3}{4}^{h}$ to 19^{h} Sharp increase in Dec. (+ 4′), followed till $20\frac{1}{4}^{h}$ by two steep waves (− 5′ and − 5′). 20^{h} Sharp increase in H.F. (+ ·0012).

10^{d} 15^{h} to 16^{h} Irregular wave in H.F. (− ·0017). $15\frac{3}{4}^{h}$ to $16\frac{3}{4}^{h}$ Wave in Dec. (− 5′).

11^{d} 2^{h} to $4\frac{1}{2}^{h}$ Irregular double wave in Dec. (+ 6′ to − 5′). 2^{h} to 4^{h} Slow wave in H.F. (+ ·0014). $2\frac{1}{2}^{h}$ to $4\frac{1}{2}^{h}$ Wave in V.F. (− ·0003).

1911.

January 13^d 17^h to $18\frac{1}{2}^h$ Wave in H.F. (− ·0023). $17\frac{1}{2}^h$ to $18\frac{1}{2}^h$ Wave in Dec. (− 6′). $20\frac{3}{4}^h$ to $21\frac{3}{4}^h$ Wave in Dec. (− 4′).

14^d $0\frac{1}{2}^h$ to $1\frac{3}{4}^h$ Irregular wave in Dec. (+ 3′).

15^d $15\frac{3}{4}^h$ to $17\frac{1}{4}^h$ Slow wave in H.F. (− ·0012). $22\frac{1}{2}^h$ to $23\frac{1}{4}^h$ Wave in H.F. (+ ·0010). 15^d $22\frac{1}{2}^h$ to 16^d 2^h Irregular wave in Dec. (− 6′).

16^d $0\frac{1}{4}^h$ to 2^h Flat-crested wave in H.F. (− ·0010). $7\frac{1}{4}^h$ to 10^h Slow wave in Dec. (+ 6′). $16\frac{1}{2}^h$ to $20\frac{1}{2}^h$ Loss of V.F. register. 18^h to $19\frac{1}{4}^h$ Wave in Dec. (− 5′). $22\frac{1}{2}^h$ to $23\frac{1}{4}^h$ Wave in H.F. (+ ·0012).

18^d $3\frac{3}{4}^h$ to $4\frac{1}{2}^h$ Wave in Dec. (− 3′). $17\frac{3}{4}^h$ to 20^h Double-crested wave in Dec. (− 7′), followed till $22\frac{1}{4}^h$ by a slow wave (− 4′). $18\frac{1}{4}^h$ to $19\frac{3}{4}^h$ Irregular wave in H.F. (+ ·0013).

20^d $16\frac{1}{2}^h$ to $17\frac{1}{4}^h$ Wave in Dec. (− 3′).

22^d $0\frac{1}{2}^h$ to $1\frac{1}{2}^h$ Wave in H.F. (+ ·0011). 22^d $23\frac{1}{4}^h$ to 23^d $0\frac{1}{4}^h$ Wave in H.F. (+ ·0010).

23^d $1\frac{1}{4}^h$ to 3^h Two successive waves in Dec. (+ 3′ and + 3′). $17\frac{1}{4}^h$ to $19\frac{1}{2}^h$ Irregular wave in Dec. (− 5′): fluctuations in H.F.

24^d 6^h to 25^d 6^h. See Plate I.

25^d $8\frac{3}{4}^h$ to 11^h Wave in H.F. (− ·0020). 14^h to $16\frac{1}{2}^h$ Two successive irregular waves in Dec. (− 4′ and − 7′). 15^h to 16^h Sharp wave in H.F. (− ·0023), followed till $17\frac{1}{2}^h$ by a double wave (− ·0018 to + ·0020), the first portion double-crested. $16\frac{3}{4}^h$ to $18\frac{1}{2}^h$ Irregular wave in Dec. (− 14′), steep at commencement. 19^h to $19\frac{3}{4}^h$ Irregular decrease in Dec. (− 6′), followed by small waves till 23^h. 19^h to $20\frac{1}{2}^h$ Irregular double-crested wave in H.F. (+ ·0020). $20\frac{3}{4}^h$ to $21\frac{3}{4}^h$ Truncated wave in H.F. (− ·0013).

26^d 0^h to $3\frac{1}{2}^h$ Irregular triple-crested wave in Dec. (− 7′). $0\frac{1}{2}^h$ to 2^h Sharp wave in H.F. (+ ·0028). $0\frac{1}{2}^h$ to $1\frac{1}{2}^h$ Decrease in V.F. (− ·0003). $5\frac{1}{2}^h$ to 7^h Double-crested wave in H.F. (− ·0013). 20^h to 22^h Irregular triple-crested wave in H.F. (+ ·0027). $20\frac{1}{4}^h$ to $20\frac{3}{4}^h$ Wave in Dec. (− 3′), followed till 22^h by two successive sharp waves (+ 4′ and + 4′). 26^d 22^h to 27^d $0\frac{1}{2}^h$ Slow wave in V.F. (+ ·0003). 26^d $23\frac{1}{4}^h$ to 27^d 1^h Flat-crested wave in H.F. (+ ·0017), steep at commencement.

27^d 1^h to 4^h Double wave in Dec. (− 3′ to + 6′). $17\frac{1}{4}^h$ to $18\frac{1}{4}^h$ Wave in Dec. (− 7′): double wave in H.F. (− ·0010 to + ·0010). 20^h to 22^h Slow wave in Dec. (− 4′). 23^h to $23\frac{3}{4}^h$ Wave in Dec. (− 3′). 27^d $23\frac{1}{2}^h$ to 28^d $1\frac{1}{4}^h$ Flat-crested wave in H.F. (+ ·0012): in V.F. small.

28^d 10^h to 11^h Wave in H.F. (− ·0012). $12\frac{1}{4}^h$ to $15\frac{1}{4}^h$ Double wave in Dec. (+ 4′ to − 5′), the second portion flat-crested. 13^h to 15^h Steep wave in H.F. (− ·0037). $13\frac{1}{2}^h$ to $14\frac{1}{2}^h$ Increase in V.F. (+ ·0004). 20^h to $22\frac{1}{2}^h$ Irregular triple-crested wave in Dec. (− 9′). $21\frac{1}{4}^h$ to $22\frac{1}{2}^h$ Sharp wave in H.F. (+ ·0028).

29^d $19\frac{1}{2}^h$ to $20\frac{1}{2}^h$ Wave in Dec. (− 4′). $20\frac{3}{4}^h$ to 22^h Sharp double wave in H.F. (− ·0013 to + ·0025). $21\frac{1}{4}^h$ to $21\frac{1}{2}^h$ Very sharp wave in Dec. (− 7′). $22\frac{1}{4}^h$ to 23^h Wave in Dec. (− 4′).

30^d $16\frac{1}{2}^h$ to $17\frac{1}{2}^h$ Wave in H.F. (− ·0010). $16\frac{3}{4}^h$ to $17\frac{1}{2}^h$ Wave in Dec. (− 5′). $17\frac{3}{4}^h$ to 18^h Sharp decrease in Dec. (− 4′), followed till $19\frac{1}{2}^h$ by a double wave (+ 4′ to − 8′). $18\frac{1}{2}^h$ to 20^h Sharp double wave in H.F. (− ·0017 to + ·0017).

31^d $0\frac{3}{4}^h$ to $2\frac{3}{4}^h$ Slow double-crested wave in Dec. (− 4′). $9\frac{1}{2}^h$ to $10\frac{1}{4}^h$ Wave in Dec. (+ 3′). $10\frac{1}{2}^h$ to 13^h Wave in H.F. (− ·0024). 15^h to 16^h Decrease in Dec. (− 13′), followed till 17^h by slower irregular increase (+ 9′). 15^h to $16\frac{1}{4}^h$ Wave in H.F. (− ·0020). 18^h to $18\frac{1}{2}^h$ Decrease in H.F. (− 0015). $19\frac{3}{4}^h$ to $20\frac{1}{2}^h$ Very sharp double wave in Dec. (− 10′ to + 5′). $19\frac{3}{4}^h$ to 21^h Sharp wave in H.F. (+ ·0043), the second portion very irregular. 20^h to $21\frac{1}{2}^h$ Wave in V.F. (− ·0003). 22^h to $23\frac{1}{2}^h$ Two successive waves in Dec. (+ 4′ and + 3′). 22^h to $23\frac{3}{4}^h$ Irregular double-crested wave in H.F. (+ ·0013), followed till February 1^d $1\frac{1}{4}^h$ by a wave (+ ·0022). $22\frac{1}{4}^h$ to $23\frac{1}{2}^h$ Decrease in V.F. (− ·0004). January 31^d $23\frac{3}{4}^h$ to February 1^d 1^h Wave in Dec. (− 5′)

February 1^d 2^h to 4^h Wave in Dec. (+ 4′). $14\frac{1}{4}^h$ to $15\frac{1}{2}^h$ Double wave in H.F. (+ ·0010 to − ·0010), followed till $17\frac{1}{2}^h$ by an irregular steep double wave (− ·0017 to + ·0015). 15^h to 19^h Slow wave in V.F. (+ ·0005). $15\frac{1}{4}^h$ to $16\frac{1}{4}^h$ Arched wave in Dec. (− 7′). $16\frac{1}{2}^h$ to 17^h Sharp wave in Dec. (− 9′). 20^h to 21^h Wave in Dec. (− 3′). $22\frac{1}{2}^h$ to 23^h Wave in Dec. (+ 3′).

2^d $1\frac{1}{4}^h$ to $2\frac{1}{2}^h$ Wave in Dec. (− 3′), followed till $4\frac{3}{4}^h$ by a double-crested wave (− 4′). 2^h to $3\frac{1}{2}^h$ Waves in H.F. (+ ·0021) and V.F. (− ·0003). 9^h to $12\frac{3}{4}^h$ Wave in H.F. (− ·0040), steep at commencement. $9\frac{1}{2}^h$ to $12\frac{1}{2}^h$ Wave in Dec. (+ 5′). $14\frac{3}{4}^h$ to $17\frac{1}{2}^h$ Double wave in H.F. (− ·0020 to + ·0018), the first portion flat-crested. 15^h to 19^h Slow wave in V.F. (+ ·0004). $15\frac{1}{4}^h$ to $16\frac{3}{4}^h$ Irregular wave in Dec. (− 4′), followed till $18\frac{1}{4}^h$ by another (− 12′), very steep at commencement, with small waves superposed on return. 19^h to $21\frac{1}{2}^h$ Three successive waves in Dec. (− 5′, − 3′, − 3′), followed till 24^h by a slow wave (− 4′). 19^h to $20\frac{3}{4}^h$ Double-crested wave in H.F. (+ ·0020), followed by small waves till $21\frac{1}{2}^h$, and from $21\frac{1}{2}^h$ to $22\frac{1}{2}^h$ by another wave (+ ·0012).

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February 4[d] $18\frac{3}{4}^h$ to $19\frac{1}{2}^h$ Sharp wave in Dec. ($-5'$). $20\frac{3}{4}^h$ to $21\frac{3}{4}^h$ Wave in Dec. ($-4'$), followed till 23^h by a slower one ($-3'$).

5[d] 0^h to $1\frac{1}{2}^h$ Wave in Dec. ($-3'$). 2^h to $2\frac{3}{4}^h$ Small sharp waves in H.F. $11\frac{3}{4}^h$ to 12^h Decrease in H.F. ($-·0015$). $11\frac{1}{2}^h$ to $12\frac{1}{4}^h$ Wave in Dec. ($+4'$). $15\frac{1}{4}^h$ to 17^h Wave in H.F. ($-·0012$). $18\frac{1}{4}^h$ to $19\frac{3}{4}^h$ Double wave in Dec. ($+3'$ to $-4'$): smaller wave in H.F. 20^h to $21\frac{3}{4}^h$ Double-crested wave in Dec. ($-9'$), the first crest very sharp. 20^h to $20\frac{3}{4}^h$ Sharp wave in H.F. ($+·0029$). 21^h to $21\frac{1}{2}^h$ Decrease in H.F. ($-·0010$), followed till $22\frac{3}{4}^h$ by an increase ($+·0020$). $22\frac{1}{2}^h$ to $23\frac{1}{2}^h$ Wave in Dec. ($+4'$). 5[d] $22\frac{3}{4}^h$ to 6[d] $0\frac{1}{2}^h$ Irregular double wave in H.F. ($-·0010$ to $+·0010$).

6[d] $15\frac{1}{2}^h$ to 17^h Double-crested wave in H.F. ($-·0010$). $15\frac{3}{4}^h$ to $17\frac{1}{4}^h$ Irregular wave in Dec. ($-6'$). $20\frac{1}{4}^h$ to 22^h Double-crested wave in H.F. ($+·0020$), the second portion sharp. $20\frac{3}{4}^h$ to 22^h Two successive waves in Dec. ($+4'$ and $+3'$). 21^h to $21\frac{3}{4}^h$ Decrease in V.F. ($-·0003$).

7[d] $2\frac{1}{2}^h$ to $3\frac{3}{4}^h$ Wave in Dec. ($+5'$). $16\frac{1}{2}^h$ to 19^h Triple-crested wave in H.F. ($-·0015$). $17\frac{1}{2}^h$ to 19^h Wave in Dec. ($-9'$).

8[d] $0\frac{1}{2}^h$ to $1\frac{3}{4}^h$ Wave in Dec. ($+3'$). 12^h to $13\frac{1}{4}^h$ Wave in H.F. ($-·0011$). $12\frac{1}{2}^h$ to $13\frac{1}{2}^h$ Wave in Dec. ($-3'$). 15^h Decrease in H.F. ($-·0013$). $17\frac{1}{2}^h$ to $19\frac{1}{4}^h$ Wave in Dec. ($-7'$).

9[d] $17\frac{1}{2}^h$ to $18\frac{1}{2}^h$ Small double wave in H.F. 18^h Sharp decrease in Dec. ($-5'$). $18\frac{1}{2}^h$ to 19^h Increase in Dec. ($+7'$).

10[d] $8\frac{3}{4}^h$ to 12^h Slow wave in H.F. ($-·0020$). 18^h to 19^h Wave in H.F. ($-·0010$). $20\frac{1}{4}^h$ to 21^h Waves in Dec. ($-4'$) and H.F. ($+·0020$).

11[d] $15\frac{1}{2}^h$ to $16\frac{1}{4}^h$ Wave in H.F. ($-·0011$). $15\frac{3}{4}^h$ to $17\frac{1}{4}^h$ Wave in Dec. ($-4'$).

12[d] $20\frac{3}{4}^h$ to $21\frac{1}{2}^h$ Wave in Dec. ($-3'$), founded and followed by smaller ones. 21^h to 23^h Triple wave in H.F. ($-·0010$, $+·0010$, $-·0010$).

13[d] 1^h to $2\frac{3}{4}^h$. Slow wave in Dec. ($-3'$). 19^h to $21\frac{1}{2}^h$ Wave in Dec. ($-20'$), the first portion steep, the return irregular. 19^h to 20^h Sharp wave in H.F. ($-·0036$), followed till $22\frac{3}{4}^h$ by an irregular double wave ($-·0024$ to $+·0026$), again followed till $23\frac{1}{2}^h$ by a sharp wave ($-·0016$). $19\frac{1}{4}^h$ to $22\frac{3}{4}^h$ Slow wave in V.F. ($+·0005$). 22^h Decrease in Dec. ($-4'$). $22\frac{3}{4}^h$ to 24^h Waves in Dec. ($-6'$ and $-3'$). 13[d] $23\frac{3}{4}^h$ to 14[d] $2\frac{1}{4}^h$ Irregular slow wave in H.F. ($-·0017$).

14[d] $0\frac{3}{4}^h$ to 2^h Sharp wave in V.F. ($+·0003$). 1^h to $1\frac{1}{4}^h$ Sharp increase in Dec. ($+10'$). $4\frac{1}{2}^h$ to $4\frac{3}{4}^h$ Increase in Dec. ($+4'$). $8\frac{3}{4}^h$ to $10\frac{3}{4}^h$. Wave in H.F. ($-·0015$). $13\frac{1}{2}^h$ to $15\frac{1}{4}^h$ Irregular wave in Dec. ($-7'$). 15^h to 16^h Loss of H.F. and V.F. registers. 16^h to $17\frac{1}{4}^h$ Slow double-crested wave in Dec. ($-3'$). $19\frac{1}{4}^h$ to $20\frac{3}{4}^h$ Wave in Dec. ($-8'$). $19\frac{1}{2}^h$ to $20\frac{1}{2}^h$ Wave in H.F. ($+·0010$). 22^h to 23^h Wave in Dec. ($-3'$): double-crested wave in H.F. ($+·0013$).

16[d] $13\frac{1}{4}^h$ to $15\frac{1}{2}^h$ Slow wave in H.F. ($-·0013$), with superposed sharp fluctuations. 16^h to 18^h Irregular wave in H.F. ($-·0012$). 17^h to 18^h Sharp decrease in Dec. ($-12'$), and increase ($+8'$). $17\frac{1}{2}^h$ to $18\frac{1}{2}^h$ Wave in V.F. ($+·0003$).

17[d] 15^h to 20^h Slow wave in V.F. ($+·0005$). $15\frac{1}{4}^h$ to $16\frac{3}{4}^h$ Double-crested wave in H.F. ($-·0013$). $16\frac{1}{4}^h$ to $17\frac{1}{2}^h$ Wave in Dec. ($-9'$). $19\frac{1}{2}^h$ to $20\frac{3}{4}^h$ Double-crested wave in Dec. ($-6'$). 20^h to $20\frac{3}{4}^h$ Wave in H.F. ($+·0010$). $23\frac{1}{4}^h$ to 24^h Waves in Dec. ($-5'$) and H.F. ($+·0018$).

18[d] $20\frac{1}{4}^h$ to $21\frac{1}{2}^h$ Waves in Dec. ($-8'$) and H.F. ($+·0030$). $22\frac{3}{4}^h$ to $23\frac{3}{4}^h$ Waves in Dec. ($+5'$) and H.F. ($+·0011$). 23^h to $23\frac{1}{2}^h$ Decrease in V.F. ($-·0003$).

19[d] $1\frac{1}{2}^h$ to 3^h Wave in Dec. ($+7'$). $17\frac{1}{2}^h$ to $18\frac{3}{4}^h$ Wave in Dec. ($-6'$).

20[d] 21^h to $22\frac{1}{4}^h$ Wave in Dec. ($-5'$).

21[d] $0\frac{1}{4}^h$ to $1\frac{1}{4}^h$ Wave in Dec. ($-4'$).

21[d] 6^h to 22[d] 6^h. See Plate I.

22[d] 6^h to 23[d] 6^h. See Plate II.

23[d] $12\frac{1}{2}^h$ to 14^h Wave in H.F. ($-·0014$). $16\frac{1}{4}^h$ to $17\frac{3}{4}^h$ Double wave in H.F. ($-·0012$ to $+·0012$). $16\frac{1}{2}^h$ Decrease in Dec. ($-4'$), continued till $19\frac{1}{4}^h$ by a quintuple wave ($-4'$, $+3'$, $-3'$, $+3'$, $-5'$). $18\frac{3}{4}^h$ to $21\frac{1}{4}^h$ Irregular quadruple wave in H.F. ($-·0017$, $+·0015$, $-·0012$, $+·0018$). $20\frac{1}{4}^h$ to $20\frac{3}{4}^h$ Sharp wave in Dec. ($-7'$). 22^h to 24^h Double wave in Dec. ($-4'$ to $+4'$). $22\frac{3}{4}^h$ to 24^h Wave in H.F. ($+·0014$).

24[d] 0^h to $2\frac{1}{4}^h$ Irregular double wave in Dec. ($-4'$ to $+4'$), the first portion flat-crested. 0^h to 3^h Irregular triple wave in H.F. ($+·0014$, $-·0010$, $+·0012$). $1\frac{3}{4}^h$ to $4\frac{1}{4}^h$ Wave in V.F. ($-·0005$). 3^h to $4\frac{1}{4}^h$ Wave in Dec. ($-4'$). $16\frac{1}{4}^h$ to $17\frac{1}{4}^h$ Wave in H.F. ($-·0023$). $16\frac{1}{2}^h$ to 18^h Irregular wave in Dec. ($-9'$). $19\frac{1}{4}^h$ to 23^h Truncated wave in Dec. ($-7'$), with small waves superposed on crest. $19\frac{1}{2}^h$ to 22^h Irregular wave in H.F. ($+·0034$).

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February 25^d $11\frac{1}{2}^h$ to 13^h Truncated wave in H.F. (−·0010): steep at commencement. $18\frac{3}{4}^h$ to $19\frac{1}{2}^h$ Wave in Dec. (− 4′): in H.F. small. $21\frac{1}{2}^h$ to $22\frac{3}{4}^h$ Double-crested waves in Dec. (+ 4′) and H.F. (+ ·0016).

26^d 0^h to $1\frac{1}{2}^h$ Double wave in Dec. (+ 4′ to − 3′): wave in V.F. (− ·0003). $3\frac{3}{4}^h$ to $5\frac{1}{4}^h$ Wave in H.F. (− ·0012). 14^h to 15^h Wave in Dec. (+ 3′). $16\frac{1}{2}^h$ to $18\frac{1}{2}^h$ Wave in H.F. (− ·0010). $21\frac{1}{4}^h$ to 23^h Wave in Dec. (− 5′). $21\frac{3}{4}^h$ to $22\frac{3}{4}^h$ Wave in H.F. (+·0010).

27^d 2^h to 3^h Decrease in V.F. (− ·0003). $2\frac{1}{2}^h$ to 3^h Wave in Dec. (+ 3′). $2\frac{1}{2}^h$ to $3\frac{3}{4}^h$ Wave in H.F. (+ ·0012). $9\frac{3}{4}^h$ to 11^h Waves in Dec. (− 4′) and H.F. (− ·0012). 14^h to $15\frac{1}{2}^h$ Double-crested wave in H.F. (− ·0017). $16\frac{3}{4}^h$ to 19^h Truncated wave in Dec. (− 7′): followed till 22^h by an irregular wave (− 9′), with a sharp wave (− 5′) superposed from $19\frac{1}{4}^h$ to $19\frac{1}{2}^h$. $17\frac{1}{4}^h$ to $18\frac{1}{4}^h$ Wave in H.F. (− ·0013). $19\frac{1}{4}^h$ to 22^h Irregular double wave in H.F. (+ ·0026 to − ·0012), steep at commencement.

28^d $0\frac{1}{4}^h$ to 1^h Wave in H.F. (− ·0010). $0\frac{3}{4}^h$ to 2^h Wave in Dec. (+ 6′), steep at commencement. $0\frac{3}{4}^h$ to $1\frac{1}{2}^h$ Decrease in V.F. (− ·0005). $4\frac{1}{2}^h$ to 6^h Double-crested wave in Dec. (+ 3′). $12\frac{3}{4}^h$ to $13\frac{1}{2}^h$ Wave in H.F. (− ·0010). $13\frac{1}{2}^h$ to $14\frac{1}{4}^h$ Wave in Dec. (+ 3′). 14^h to $14\frac{1}{2}^h$ Wave in H.F. (− ·0010). $14\frac{1}{2}^h$ to 17^h Irregular double wave in Dec. (+ 3′ to − 4′). 15^h to $16\frac{1}{4}^h$ Double wave in H.F. (− ·0012 to + ·0008). $17\frac{3}{4}^h$ to 20^h Triple-crested wave in Dec. (− 8′). 18^h to $19\frac{3}{4}^h$ Two successive waves in H.F. (+ ·0010 and + ·0018). 21^h to $22\frac{3}{4}^h$ Sharp triple wave in Dec. (− 6′, + 6′, − 10′). 21^h to $21\frac{3}{4}^h$ Sharp wave in H.F. (+ ·0036). $21\frac{1}{4}^h$ to 23^h Wave in V.F. (− ·0005). 22^h to $22\frac{1}{2}^h$ Wave in H.F. (+ ·0010). February 28^d 23^h to March 1^d $1\frac{1}{2}^h$ Irregular double-crested wave in H.F. (+ ·0025).

March 1^d 0^h to 2^h Wave in Dec. (− 9′). $2\frac{3}{4}^h$ to 4^h Wave in Dec. (+ 5′) and H.F. (+ ·0010). $7\frac{1}{2}^h$ to 9^h Wave in H.F. (− ·0013). 13^h to $13\frac{3}{4}^h$ Wave in H.F. (− ·0012). 15^h to 17^h Rapid fluctuations in H.F. 17^h to 18^h Wave in Dec. (− 4′). 17^h to $17\frac{3}{4}^h$ Wave in H.F. (− ·0010). $18\frac{3}{4}^h$ to 21^h Irregular double wave in H.F. (− ·0010 to + ·0013), the first portion double-crested, the second triple-crested. $19\frac{1}{2}^h$ to $20\frac{1}{2}^h$ Irregular wave in Dec. (− 4′). 1^d $23\frac{1}{4}^h$ to 2^d 1^h Flat-crested wave in H.F. (+ ·0011).

2^d $15\frac{3}{4}^h$ to $17\frac{1}{4}^h$ Double-crested wave in H.F. (−·0012).

3^d $9\frac{3}{4}^h$ to $10\frac{3}{4}^h$ Wave in Dec. (− 3′). 18^h to $19\frac{3}{4}$ Double wave in H.F. (−·0013 to +·0017). $18\frac{1}{4}^h$ to $19\frac{1}{4}$ Sharp wave in Dec. (− 11′). 20^h to 22^h Wave in Dec. (− 5′), sharp at commencement. $23\frac{1}{4}^h$ to 24^h Wave in Dec. (+ 4′): in H.F. small.

4^d $19\frac{1}{4}^h$ to $21\frac{1}{4}^h$ Irregular double-crested wave in Dec. (− 7′). $19\frac{1}{4}^h$ to 20^h Wave in H.F. (−·0017), followed till 22^h by a triple-crested wave (− ·0019). $21\frac{3}{4}^h$ to 23^h Wave in Dec. (− 4′). $22\frac{1}{4}^h$ to 23^h Wave in H.F. (− ·0012).

5^d $3\frac{1}{2}^h$ to $4\frac{1}{2}^h$ Double wave in Dec. (+ 5′ to − 3′): wave in V.F. (− ·0003). $3\frac{1}{2}^h$ to 6^h Triple wave in H.F. (+ ·0010, − ·0008, + ·0009). 9^h to $9\frac{3}{4}^h$ Sharp decrease in H.F. (− ·0028). 14^h to $15\frac{1}{2}^h$ Wave in H.F. (− ·0025), with superposed fluctuations, followed till $17\frac{3}{4}^h$ by another wave (−·0035). $14\frac{1}{2}^h$ to $15\frac{3}{4}^h$ Truncated wave in Dec. (− 5′). $14\frac{3}{4}^h$ to $21\frac{1}{2}^h$ Wave in V.F. (+ ·0008). $16\frac{3}{4}^h$ to 18^h Sharp wave in Dec. (− 12′). $18\frac{3}{4}^h$ to 21^h Three successive waves in Dec. (− 4′, − 3′, − 4′), the first double-crested. $18\frac{3}{4}^h$ to 22^h Four successive waves in H.F. (+ ·0010, + ·0012, + ·0021, + ·0027). $22\frac{3}{4}^h$ to $23\frac{1}{4}^h$ Waves in Dec. (+ 3′), and H.F. (+ ·0010).

6^d $18\frac{1}{4}^h$ to $19\frac{3}{4}^h$ Sharp triple-crested wave in Dec. (− 9′): irregular wave in H.F. (+ ·0040).

7^d 16^h to $16\frac{1}{2}^h$ Decrease in Dec. (− 4′). 21^h to $22\frac{1}{4}^h$ Double-crested wave in Dec. (+ 4′): wave in H.F. (+·0017). $21\frac{1}{4}^h$ to $21\frac{3}{4}^h$ Decrease in V.F. (− ·0003).

8^d 11^h to 14^h Wave in H.F. (−·0027).

9^d 20^h to 21^h Wave in Dec. (− 3′).

13^d $20\frac{3}{4}^h$ to 22^h Truncated wave in H.F. (− ·0010): in Dec. small.

14^d $4\frac{3}{4}^h$ to $8\frac{1}{2}^h$ Double-crested wave in Dec. (+ 8′). 5^h to $6\frac{3}{4}^h$ Wave in H.F. (+·0016). $5\frac{1}{4}^h$ to 6^h Decrease in V.F. (−·0003). $22\frac{1}{4}^h$ to 24^h Double-crested wave in H.F. (+ ·0011).

15^d $0\frac{1}{4}^h$ to $0\frac{3}{4}^h$ Irregular increase in Dec. (+ 5′). $0\frac{3}{4}^h$ to $2\frac{1}{2}^h$ Decrease in V.F. (− ·0004). 2^h to 4^h Double wave in Dec. (− 4′ to + 3′). $2\frac{1}{4}^h$ to 5^h Two successive waves in H.F. (− ·0012 and − ·0010). 12^h to $13\frac{1}{4}^h$ Wave in H.F. (− ·0011). 15^d $23\frac{1}{2}^h$ to 16^d $0\frac{1}{4}^h$ Sharp wave in H.F. (+ ·0024).

16^d $10\frac{1}{2}^h$ to 11^h Decrease in H.F. (− ·0010).

19^d 12^h to 15^h Loss of V.F. register.

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March $20^{d}\ 0\frac{3}{4}^{h}$ Sudden increase in H.F. (+ ·0008): in Dec. small. $2\frac{3}{4}^{h}$ to $5\frac{3}{4}^{h}$ Irregular quadruple wave in Dec. (− 3′, + 4′, −4′, + 3′): two successive irregular waves in H.F. (− ·0027 and − ·0020), the first commencing with a sharp spasmodic double wave: small slow waves in V.F. 8^{h} to $8\frac{3}{4}^{h}$ Decrease in H.F. (− ·0018). 9^{h} to $10\frac{1}{4}^{h}$ Sharp decrease in H.F. (− ·0040). $9\frac{1}{2}^{h}$ to 10^{h} Sharp increase in Dec. (+ 5′). $12\frac{1}{4}^{h}$ to $13\frac{1}{4}^{h}$ Two successive waves in H.F. (− ·0012 and − ·0010). $13\frac{3}{4}^{h}$ to $14\frac{1}{2}^{h}$ Irregular wave in H.F. (+ ·0014): in Dec. small. 15^{h} to $19\frac{3}{4}^{h}$ Slow wave in V.F. (+ ·0005). $15\frac{1}{4}^{h}$ to $15\frac{1}{2}^{h}$ Sharp decrease in Dec. (− 7′), continued till 17^{h} by two successive sharp truncated waves (− 8′ and − 6′). $15\frac{1}{4}^{h}$ to $16\frac{1}{4}^{h}$ Double wave in H.F. (− ·0010 to + ·0042), followed till 17^{h} by a wave (+ ·0017). 17^{h} to $17\frac{1}{4}^{h}$ Sharp wave in Dec. (− 3′). $17\frac{1}{4}^{h}$ to 18^{h} Sharp increase in H.F. (+ ·0010), followed by a wave (− ·0017). $17\frac{1}{2}^{h}$ to 18^{h} Irregular decrease in Dec. (− 6′), followed till 20^{h} by an irregular triple wave (+ 4′, − 16′, + 4′). $18\frac{3}{4}^{h}$ to 20^{h} Triple-crested wave in H.F. (+ ·0047), followed till $21\frac{3}{4}^{h}$ by a triple wave (− ·0014, + ·0029, − ·0016). 20^{h} Sudden increase in Dec. (+ 3′), followed till $21\frac{1}{2}^{h}$ by a sharp irregular double wave (− 5′ to + 10′). $20\frac{1}{2}^{h}$ to $21\frac{1}{4}^{h}$ Decrease in V.F. (− ·0005). $21\frac{1}{2}^{h}$ to $21\frac{3}{4}^{h}$ Increase in Dec. (+ 5′). $21\frac{3}{4}^{h}$ to $23\frac{1}{4}^{h}$ Irregular double wave in H.F. (− ·0013 to + ·0016). 22^{h} to 24^{h} Irregular double wave in Dec. (− 3′ to + 3′), the first portion triple-crested. $20^{d}\ 22\frac{1}{4}^{h}$ to $21^{d}\ 1\frac{1}{2}^{h}$ Wave in V.F. (− ·0004).

$21^{d}\ 0^{h}$ to $1\frac{1}{2}^{h}$ Decrease in H.F. (− ·0020). $1\frac{1}{4}^{h}$ to $1\frac{3}{4}^{h}$ Increase in Dec. (+ 5′). 5^{h} to $6\frac{3}{4}^{h}$ Wave in H.F. (− ·0021). 9^{h} to 12^{h} Irregular wave in H.F. (− ·0024). 12^{h} to $14\frac{1}{4}^{h}$ Two successive irregular waves in Dec. (+ 5′ and + 6′). $12\frac{1}{4}^{h}$ to $13\frac{1}{4}^{h}$ Triple-crested wave in H.F. (− ·0013). 13^{h} to $13\frac{3}{4}^{h}$ Increase in V.F. (+ ·0005). 14^{h} to $14\frac{1}{2}^{h}$ Sharp double-crested wave in H.F. (− ·0022). 15^{h} to $16\frac{1}{4}^{h}$ Increase in V.F. (+ ·0007). $15\frac{1}{2}^{h}$ to $17\frac{1}{4}^{h}$ Triple wave in H.F. (− ·0024, + ·0021, − ·0014). $15\frac{3}{4}^{h}$ to $16\frac{1}{4}^{h}$ Sharp decrease in Dec. (− 23′), followed till 17^{h} by slower partial return (+ 14′). $17\frac{1}{4}^{h}$ to $18\frac{3}{4}^{h}$ Double wave in Dec. (+ 5′ to − 9′), each portion double-crested, followed till $19\frac{1}{2}^{h}$ by small waves. $17\frac{3}{4}^{h}$ Sharp decrease in H.F. (− ·0014). 18^{h} to 19^{h} Sharp irregular triple wave in H.F. (− ·0010, + ·0040, − ·0014). $18\frac{1}{4}^{h}$ to $18\frac{1}{2}^{h}$ Sharp decrease in V.F. (− ·0003). $19\frac{3}{4}^{h}$ to $21\frac{1}{2}^{h}$ Irregular wave in Dec. (− 8′). 20^{h} to $21\frac{1}{2}^{h}$ Truncated wave in H.F. (+ ·0020). $22\frac{1}{2}^{h}$ to 24^{h} Wave in Dec. (+ 8′). $22\frac{1}{2}^{h}$ to $23\frac{1}{4}^{h}$ Wave in H.F. (− ·0010). $22\frac{3}{4}^{h}$ to 24^{h} Decrease in V.F. (− ·0006).

$22^{d}\ 0\frac{1}{4}^{h}$ to 3^{h} Irregular double wave in Dec. (− 4′ to + 5′), both portions flat-crested. 1^{h} to 2^{h} Waves in H.F. (− ·0015) and V.F. (+ ·0003). $2\frac{3}{4}^{h}$ to 5^{h} Flat-crested wave in H.F. (− ·0015). 3^{h} to $5\frac{1}{4}^{h}$ Slow wave in V.F. (+ ·0004). 4^{h} to $5\frac{1}{4}^{h}$ Wave in Dec. (+ 5′). 9^{h} to 11^{h} Wave in H.F. (− ·0015). $16\frac{1}{2}^{h}$ to 18^{h} Wave in Dec. (− 5′). $16\frac{1}{2}^{h}$ to 17^{h} Wave in H.F. (− ·0012). 19^{h} to $20\frac{3}{4}^{h}$ Sharp wave in Dec. (− 10′). $19\frac{1}{4}^{h}$ to 21^{h} Wave in H.F. (+ ·0032). $22^{d}\ 23\frac{1}{4}^{h}$ to $23^{d}\ 1\frac{1}{2}^{h}$ Irregular double-crested wave in H.F. (+ ·0033). $22^{d}\ 23\frac{1}{2}^{h}$ to $23^{d}\ 1\frac{1}{4}^{h}$ Double wave in Dec. (+ 6′ to − 7′), followed till 2^{h} by a wave (− 4′). $22^{d}\ 23\frac{1}{2}^{h}$ to $23^{d}\ 2\frac{1}{2}^{h}$ Wave in V.F. (− ·0005), steep at commencement.

$23^{d}\ 7^{h}$ to 8^{h} Wave in H.F. (− ·0012). $8\frac{1}{4}^{h}$ to 10^{h} Wave in Dec. (− 3′), with very sharp superposed fluctuations. $14\frac{3}{4}^{h}$ to 16^{h} Wave in V.F. (− ·0003). 15^{h} to 18^{h} Irregular quadruple wave in H.F. (− ·0015, + ·0012, − ·0011, + ·0024). $15\frac{1}{4}^{h}$ to 16^{h} Truncated wave in Dec. (− 4′), followed till $18\frac{3}{4}^{h}$ by an irregular triple-crested wave (− 12′). $19\frac{1}{2}^{h}$ to 20^{h} Wave in Dec. (− 5′), followed till 24^{h} by an irregular double wave (− 10′ to + 4′), the first portion quadruple-crested. $19\frac{1}{2}^{h}$ to $20\frac{3}{4}^{h}$ Wave in H.F. (+ ·0028), followed till $23\frac{1}{2}^{h}$ by an irregular double wave (+ ·0027 to − ·0020). 21^{h} to $23\frac{1}{2}^{h}$ Wave in V.F. (− ·0005). $23^{d}\ 23\frac{3}{4}^{h}$ to $24^{d}\ 1^{h}$ Double-crested wave in H.F. (− ·0011). $23^{d}\ 23\frac{1}{2}^{h}$ to $24^{d}\ 2^{h}$ Slow wave in V.F. (− ·0004).

$24^{d}\ 0^{h}$ to $2\frac{1}{4}^{h}$ Double wave in Dec. (+ 3′ to − 4′). $11\frac{1}{2}^{h}$ to 12^{h} Sharp wave in H.F. (− ·0014): small double wave in Dec. $15\frac{3}{4}^{h}$ to $16\frac{3}{4}^{h}$ Wave in Dec. (− 5′). $15\frac{3}{4}^{h}$ to $16\frac{1}{2}^{h}$ Wave in H.F. (− ·0010). $20\frac{3}{4}^{h}$ to $21\frac{3}{4}^{h}$ Sharp decrease in Dec. (− 15′), with partial return (+ 10′): sharp wave in H.F. (+ ·0020), followed till $23\frac{1}{2}^{h}$ by a flat-crested wave (+ ·0028). $22\frac{1}{4}^{h}$ to $23\frac{3}{4}^{h}$ Wave in Dec. (− 5′).

$25^{d}\ 0^{h}$ to 2^{h} Wave in V.F. (+ ·0003). $1\frac{1}{2}^{h}$ to $4\frac{1}{2}^{h}$ Irregular double wave in Dec. (+ 6′ to − 5′). $1\frac{3}{4}^{h}$ to $5\frac{1}{2}^{h}$ Irregular triple wave in H.F. (− ·0014, + ·0015, − ·0015). $6\frac{3}{4}^{h}$ to $7\frac{1}{4}^{h}$ Decrease in H.F. (− ·0018). 9^{h} to $10\frac{1}{4}^{h}$ Wave in H.F. (− ·0018). $11\frac{3}{4}^{h}$ to $13\frac{1}{2}^{h}$ Wave in H.F. (− ·0017): in Dec. small. 16^{h} to $16\frac{3}{4}^{h}$ Decrease in H.F. (− ·0015), followed by increase (+ ·0027). $16\frac{1}{4}^{h}$ to 17^{h} Wave in Dec. (− 5′). $17\frac{1}{2}^{h}$ to 19^{h} Double wave in H.F. (− ·0011 to + ·0018), the middle portion steep. 18^{h} to $19\frac{1}{4}^{h}$ Wave in Dec. (− 10′), steep at commencement. $19\frac{3}{4}^{h}$ to $20\frac{1}{4}^{h}$ Wave in Dec. (− 4′), steep at commencement. $19\frac{3}{4}^{h}$ to $21\frac{1}{4}^{h}$ Double-crested wave in H.F. (+ ·0015). $21\frac{3}{4}^{h}$ to $23\frac{1}{2}^{h}$ Double-crested wave in H.F. (+ ·0020). 22^{h} to $22\frac{3}{4}^{h}$ Wave in Dec. (+ 5′). $22\frac{1}{4}^{h}$ to 23^{h} Decrease in V.F. (− ·0005). $25^{d}\ 23^{h}$ to $26^{d}\ 0\frac{3}{4}^{h}$ Wave in Dec. (− 5′).

$26^{d}\ 1\frac{1}{4}^{h}$ to $3\frac{1}{4}^{h}$ Wave in Dec. (+ 6′). 2^{h} to 4^{h} Slow wave in H.F. (+ ·0013). 12^{h} to $13\frac{1}{2}^{h}$ Double-crested wave in H.F. (− ·0016). $14\frac{1}{4}^{h}$ to $14\frac{1}{2}^{h}$ Decrease in Dec. (− 4′): small wave in H.F. $17\frac{1}{4}^{h}$ to 18^{h} Double-crested wave in Dec. (− 6′). $17\frac{1}{2}^{h}$ to $20\frac{1}{2}^{h}$ Irregular triple wave in H.F. (+ ·0017, − ·0013, + ·0018), the first and second portions double-crested, followed till $21\frac{1}{2}^{h}$ by a wave (+ ·0013). 19^{h} to $20\frac{1}{2}^{h}$ Wave in Dec. (− 9′), followed till 24^{h} by an irregular wave (− 12′).

$27^{d}\ 2^{h}$ to 7^{h} Triple wave in Dec. (+ 3′, − 3′, + 5′). $4\frac{1}{4}^{h}$ to $5\frac{1}{2}^{h}$ Wave in H.F. (− ·0018). $8\frac{1}{4}^{h}$ to 10^{h} Flat-crested wave in Dec. (− 4′). $8\frac{1}{4}^{h}$ to $12\frac{1}{2}^{h}$ Flat-crested wave in H.F. (− ·0020). $13\frac{1}{4}^{h}$ to $15\frac{1}{4}^{h}$ Wave in H.F. (− ·0012). 19^{h} to 21^{h} Sharp double wave in H.F. (− ·0012 to + ·0030). $19\frac{1}{4}^{h}$ to $21\frac{1}{2}^{h}$ Irregular triple-crested wave in Dec. (− 10′), steep at commencement. 20^{h} to $20\frac{1}{2}^{h}$ Decrease in V.F. (− ·0003). $27^{d}\ 22\frac{1}{2}^{h}$ to $28^{d}\ 3^{h}$ Irregular double wave in Dec. (+ 7′ to − 5′). $27^{d}\ 23^{h}$ to $28^{d}\ 2\frac{1}{4}^{h}$ Irregular wave in H.F. (+ ·0022). $27^{d}\ 23^{h}$ to $28^{d}\ 3^{h}$ Wave in V.F. (− ·0005).

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March 28d $4\frac{1}{2}^h$ to 8^h Wave in Dec. (+ 12′). $5\frac{1}{4}^h$ to $6\frac{1}{2}^h$ Wave in H.F. (− ·0012). 16^h to $18\frac{1}{4}^h$ Double wave in H.F. (+ ·0010 to − ·0010), followed till $22\frac{1}{4}^h$ by another double wave (− ·0013 to + ·0020). $19\frac{1}{2}^h$ to $22\frac{1}{4}^h$ Quadruple wave in Dec. (+ 3′, − 4′, + 3′, − 3′). 20^h to $23\frac{1}{2}^h$ Wave in V.F. (− ·0004).

29d 0^h to $1\frac{3}{4}^h$ Double wave in Dec. (+ 3′ to − 4′). 0^h to $4\frac{1}{2}^h$ Wave in V.F. (− ·0005). $0\frac{1}{4}^h$ to $1\frac{3}{4}^h$ Wave in H.F. (+ ·0016). 4^h to $5\frac{1}{2}^h$ Wave in Dec. (+ 4′). 17^h to 19^h Double-crested wave in Dec. (− 4′).

30d $1\frac{1}{4}^h$ to $3\frac{1}{2}^h$ Wave in Dec. (+ 5′). $18\frac{1}{4}^h$ to $19\frac{3}{4}^h$ Wave in Dec. (− 3′).

31d $18\frac{1}{4}^h$ to 20^h Wave in H.F. (− ·0014). 19^h to 20^h Wave in Dec. (− 3′).

April 1d $17\frac{1}{4}^h$ to 19^h Wave in H.F. (− ·0019). 18^h to 19^h Wave in Dec. (− 3′). 22^h to 24^h Truncated wave in Dec. (− 4′). $22\frac{1}{4}^h$ to $23\frac{1}{4}^h$ Wave in H.F. (+ ·0013).

3d 0^h to $1\frac{1}{2}^h$ Double-crested wave in H.F. (+ ·0018): decrease in V.F. (− ·0005). 1^h to $2\frac{3}{4}^h$ Slightly truncated wave in Dec. (− 8′). 2^h to $2\frac{1}{4}^h$ Decrease in H.F. (− ·0010). $18\frac{1}{2}^h$ to $20\frac{1}{4}^h$ Double wave in H.F. (− ·0011 to + ·0017). 19^h to 20^h Slightly truncated wave in Dec. (− 7′).

4d 20^h to 21^h Wave in Dec. (− 4′). 20^h to $21\frac{1}{2}^h$ Wave in H.F. (+ ·0023).

6d 20^h to $21\frac{3}{4}^h$ Irregular flat-crested wave in H.F. (+ ·0010).

7d $20\frac{3}{4}^h$ to $23\frac{1}{4}^h$ Wave in Dec. (− 6′).

8d 11^h to 14^h Fluctuations in Dec. and H.F. 8d 18^h to 9d 18^h See Plate II.

9d $22\frac{1}{4}^h$ to 24^h Irregular wave in H.F. (+ ·0028), steep at commencement: wave in V.F. (− ·0003). $22\frac{1}{2}^h$ to 24^h Double wave in Dec. (+ 3′ to − 4′).

10d 2^h to $2\frac{3}{4}^h$ Wave in Dec. (− 3′), followed till 5^h by an irregular double wave (− 4′ to + 5′). $2\frac{3}{4}^h$ to 5^h Double wave in H.F. (+ ·0010 to − ·0017): small wave in V.F. 12^h to $14\frac{1}{2}^h$ Wave in H.F. (− ·0017). 21^h Sharp decrease in Dec. (− 4′). 10d $22\frac{1}{2}^h$ to 11d 3^h Wave in V.F. (− ·0008). 10d 23^h to 11d $1\frac{1}{2}^h$ Irregular double-crested wave in Dec. (− 9′). 10d $23\frac{1}{2}^h$ to 11d $0\frac{1}{2}^h$ Irregular triple-crested wave in H.F. (+ ·0024), steep at end.

11d 14^h to $16\frac{1}{2}^h$ Loss of H.F. and V.F. registers.

12d $5\frac{3}{4}^h$ to 7^h Wave in Dec. (+ 3′). $17\frac{3}{4}^h$ to $19\frac{1}{2}^h$ Irregular truncated wave in Dec. (− 4′). 18^h to $19\frac{3}{4}^h$. Irregular triple-crested wave in H.F. (+ ·0016).

13d $19\frac{1}{2}^h$ to 20^h Wave in Dec. (− 3′). 22^h to 23^h Wave in H.F. (+ ·0010).

16d 0^h to 17d 0^h See Plate II.

17d $1\frac{1}{2}^h$ to $3\frac{1}{4}^h$ Irregular double wave in Dec. (− 3′ to + 5′), the second portion triple-crested. $1\frac{3}{4}^h$ to 4^h Irregular double wave in H.F. (− ·0011 to + ·0014), both portions truncated. 2^h to $4\frac{3}{4}^h$ Irregular wave in V.F. (− ·0003). $6\frac{1}{4}^h$ to 7^h Decrease in H.F. (− ·0018). 9^h to 10^h Double wave in H.F. (− ·0010 to + ·0009). $9\frac{1}{4}^h$ to 10^h Wave in Dec. (− 4′), followed by very sharp fluctuations. $12\frac{1}{2}^h$ to $13\frac{1}{2}^h$ Wave in H.F. (− ·0013). $17\frac{1}{2}^h$ to $18\frac{1}{4}^h$ Wave in H.F. (− ·0012). $18\frac{1}{2}^h$ to $18\frac{3}{4}^h$ Increase in Dec. (+ 3′). $18\frac{1}{2}^h$ to 19^h Wave in H.F. (+ ·0013). 20^h to 22^h Irregular wave in H.F. (+ ·0033). $21\frac{1}{4}^h$ to $22\frac{3}{4}^h$ Double-crested wave in Dec. (− 4′). $23\frac{1}{4}^h$ to 24^h Wave in Dec. (− 3′).

18d $11\frac{1}{4}^h$ to 12^h Wave in H.F. (− ·0018), followed till 13^h by another wave (− ·0008), superposed on an increase (+ ·0010). $11\frac{3}{4}^h$ to $12\frac{3}{4}^h$ Wave in Dec. (+ 3′). $14\frac{1}{2}^h$ to 16^h Wave in Dec. (− 3′), with superposed fluctuations. $14\frac{3}{4}^h$ to $15\frac{3}{4}^h$ Wave in H.F. (+ ·0012), with superposed fluctuations. 17^h to $17\frac{3}{4}^h$ Wave in Dec. (− 4′), with superposed fluctuations, followed till 19^h by a double-crested wave (− 3′). $17\frac{1}{4}^h$ to 18^h Wave in H.F. (+ ·0016). 20^h to 21^h Wave in Dec. (− 4′). $20\frac{1}{4}^h$ to $21\frac{3}{4}^h$ Double-crested wave in H.F. (+ ·0014), followed till $22\frac{3}{4}^h$ by a wave (+ ·0011). 18d 23^h to 19d 1^h Wave in H.F. (+ ·0020). 18d $23\frac{3}{4}^h$ to 19d $2\frac{1}{4}^h$ Irregular double wave in Dec. (− 4′ to + 3′).

19d 10^h to 13^h Slow wave in H.F. (− ·0018). $17\frac{1}{4}^h$ to $18\frac{1}{2}$ Wave in Dec. (− 5′). $17\frac{1}{4}^h$ to 18^h Wave in H.F. (− ·0016). 20^h to $21\frac{1}{2}^h$ Sharp double wave in Dec. (+ 5′ to − 7′): two successive waves in H.F. (+ ·0016 and + ·0013). $20\frac{1}{2}^h$ to 21^h Decrease in V.F. (− ·0004). 19d 23^h to 20d $0\frac{1}{2}^h$ Double-crested wave in Dec. (+ 4).

20d $2\frac{3}{4}^h$ to $5\frac{3}{4}^h$ Slow irregular double wave in Dec. (+ 3′ to − 3′). 3^h to 5^h Wave in H.F. (+ ·0018). 3^h to $5\frac{1}{2}^h$ Wave in V.F. (− ·0003). $20\frac{3}{4}^h$ to 21^h Sharp wave in Dec. (− 5′), followed till 24^h by an irregular wave (− 8′). $20\frac{3}{4}^h$ to $22\frac{3}{4}^h$ Irregular sharp double wave in H.F. (+ ·0038 to − ·0010): the intermediate portion interrupted half-way by a nearly quiescent period from $21\frac{1}{4}^h$ to 22^h. $20\frac{3}{4}^h$ to $21\frac{3}{4}^h$ Decrease in V.F. (− ·0004).

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April 21^d^ $1\frac{3}{4}^h$ to $2\frac{3}{4}^h$ Wave in Dec. (− 3′). $1\frac{3}{4}^h$ to $3\frac{1}{2}^h$ Wave in H.F. (− ·0013). $3\frac{1}{4}^h$ to 5^h Flat-crested wave in Dec. (− 3′). 4^h to $5\frac{1}{2}^h$ Wave in H.F. (− ·0013). 13^h to 14^h Wave in H.F. (− ·0014). 18^h to 20^h Double wave in H.F. (− ·0015 to + ·0015), continued to $20\frac{1}{4}^h$ by a decrease (− ·0012). $18\frac{1}{4}^h$ to $20\frac{3}{4}^h$ Two successive waves in Dec. (− 11′ and − 3′). 22^h to 24^h Wave in Dec. (+ 11′). 21^d $22\frac{3}{4}^h$ to 22^d 1^h Flat-crested wave in H.F. (+ ·0013): irregular wave in V.F. (− ·0003).

22^d $0\frac{3}{4}^h$ to $2\frac{1}{4}^h$ Flat-crested wave in Dec. (+ 5′). $11\frac{3}{4}^h$ to $12\frac{3}{4}^h$ Wave in H.F. (− ·0013). $14\frac{3}{4}^h$ to $16\frac{1}{4}^h$ Wave in Dec. (− 6′): double wave in H.F. (− ·0010 to + ·0019): wave in V.F. (+ ·0003). $17\frac{3}{4}^h$ to $18\frac{1}{2}^h$ Wave in H.F. (+ ·0012). $18\frac{1}{2}^h$ to $19\frac{1}{4}^h$ Truncated wave in Dec. (− 3′). $20\frac{3}{4}^h$ to $21\frac{3}{4}^h$ Double-crested wave in Dec. (− 4′). 22^h to $22\frac{3}{4}^h$ Wave in Dec. (+ 3′). 22^d $22\frac{1}{2}^h$ to 23^d 1^h Wave in Dec. (+ 6′). 22^d $23\frac{3}{4}^h$ to 23^d $0\frac{3}{4}^h$ Wave in H.F. (+ ·0012).

23^d 0^h to $0\frac{1}{2}^h$ Decrease in V.F. (− ·0003). 2^h to $3\frac{3}{4}^h$ Slow waves in Dec. (+ 3′) and H.F. (− ·0013). $11\frac{1}{2}^h$ to $12\frac{3}{4}^h$ Wave in H.F. (− ·0010). 19^h to $19\frac{3}{4}^h$ Wave in Dec. (− 4′). 19^h to 20^h Wave in H.F. (+ ·0011). $22\frac{3}{4}^h$ to 24^h. Wave in Dec. (+ 3′).

25^d $0\frac{1}{4}^h$ to $1\frac{3}{4}^h$ Slow wave in Dec. (+ 3′).

26^d $0\frac{1}{2}^h$ to 2^h Wave in Dec. (+ 4′).

28^d 13^h to 15^h Wave in H.F. (− ·0014). $17\frac{1}{4}^h$ to $18\frac{1}{2}^h$ Double-crested wave in Dec. (− 5′): in H.F. small.

29^d $2\frac{1}{2}^h$ to 4^h Wave in Dec. (+ 3′).

30^d $7\frac{1}{2}^h$ to $8\frac{3}{4}^h$ Wave in H.F. (− ·0016). $7\frac{3}{4}^h$ to $9\frac{1}{2}^h$ Wave in Dec. (+ 5′). $14\frac{3}{4}^h$ to $15\frac{3}{4}^h$ Truncated wave in H.F. (− ·0011). 15^h to $19\frac{1}{2}^h$ Slow wave in V.F. (+ ·0007). $16\frac{1}{2}^h$ to 18^h Waves in Dec. (− 9′) and H.F. (+ ·0036). 20^h to 22^h Double-crested wave in Dec. (− 10′). $20\frac{1}{2}^h$ to $21\frac{1}{2}^h$ Irregular wave in H.F. (+ ·0020). 22^h to $23\frac{1}{4}^h$ Wave in H.F. (+ ·0014). $22\frac{1}{4}^h$ to 24^h Double-crested waves in Dec. (− 7′) and V.F. (− ·0003).

May 3^d $19\frac{3}{4}^h$ to $20\frac{1}{2}^h$ Wave in Dec. (− 4′): in H.F. small.

4^d $11\frac{1}{4}^h$ to 5^d $1\frac{1}{4}^h$ Loss of Dec. and H.F. Registers.

5^d $18\frac{3}{4}^h$ to $20\frac{1}{4}^h$ Wave in Dec. (− 4′). 5^d $22\frac{1}{2}^h$ to 6^d $0\frac{3}{4}^h$ Double wave in Dec. (+ 4′ to − 3′). 5^d $22\frac{1}{2}^h$ to 6^d $0\frac{1}{4}^h$ Wave in H.F. (+ ·0016). 5^d $22\frac{3}{4}^h$ to 6^d $0\frac{1}{2}^h$ Wave in V.F. (− ·0003).

6^d $15\frac{1}{2}^h$ to 17^h Double-crested wave in H.F. (− ·0012). 20^h to 23^h Decrease in V.F. (− ·0007). $20\frac{1}{4}^h$ to 21^h Wave in Dec. (− 6′). $20\frac{1}{2}^h$ to $21\frac{1}{4}^h$ Wave in H.F. (+ ·0018). $22\frac{1}{4}^h$ to $23\frac{3}{4}^h$ Double-crested wave in H.F. (+ ·0016). $22\frac{3}{4}^h$ to $23\frac{1}{2}^h$ Wave in Dec. (− 5′).

7^d $5\frac{3}{4}^h$ to $7\frac{1}{4}^h$ Flat-crested wave in H.F. (+ ·0010). 6^h to 7^h Decrease in V.F. (− ·0003). $11\frac{3}{4}^h$ to 13^h Double wave in H.F. (+ ·0008 to − ·0011). $14\frac{1}{2}^h$ to $15\frac{1}{4}^h$ Very sharp double-crested wave in H.F. (+ ·0016), followed till $16\frac{1}{4}^h$ by an irregular wave (+ ·0040). 15^h to 19^h Slow wave in V.F. (+ ·0005). $15\frac{1}{2}^h$ to $16\frac{1}{2}^h$ Irregular wave in Dec. (+ 4′). $16\frac{3}{4}^h$ to $18\frac{1}{2}^h$ Double-crested wave in Dec. (− 6′). 17^h to $19\frac{3}{4}^h$ Irregular triple-crested wave in H.F. (+ ·0028).

8^d $0\frac{1}{2}^h$ to 1^h Increase in H.F. (+ ·0012). $0\frac{3}{4}^h$ to $2\frac{1}{4}^h$ Irregular double wave in Dec. (+ 3′ to − 3′). 1^h to 2^h Decrease in V.F. (− ·0004). $1\frac{3}{4}^h$ to $3\frac{1}{4}^h$ Flat-crested wave in H.F. (− ·0012), followed till 6^h by a slow double-crested wave (− ·0014). 5^h to 6^h Truncated wave in Dec. (+ 3′).

9^d $15\frac{1}{2}^h$ to $16\frac{3}{4}^h$ Wave in H.F. (− ·0012).

10^d $0\frac{1}{2}^h$ to 2^h Wave in Dec. (+ 5′). 1^h to $2\frac{1}{4}^h$ Wave in H.F. (+ ·0011). 1^h to $1\frac{3}{4}^h$ Decrease in V.F. (− ·0003). $22\frac{1}{2}^h$ to $22\frac{3}{4}^h$ Decrease in Dec. (− 4′).

11^d $0\frac{1}{2}^h$ to 4^h Irregular triple wave in Dec. (+ 10′, − 3′, + 3′): the first two movements sharp. $0\frac{1}{2}^h$ to $1\frac{3}{4}^h$ Double wave in H.F. (− ·0010 to + ·0010): the first two movements sharp. 1^h to 4^h Wave in V.F. (− ·0005), steep at commencement. $12\frac{3}{4}^h$ to $14\frac{3}{4}^h$ Flat-crested wave in H.F. (− ·0016). $16\frac{1}{2}^h$ to $17\frac{3}{4}^h$ Waves in Dec. (− 5′) and H.F. (+ ·0020). $21\frac{3}{4}^h$ to $23\frac{1}{2}^h$ Two successive waves in Dec. (+ 3′ and + 5′). 22^h to 23^h Wave in H.F. (− ·0010): in V.F. small.

14^d 16^h to 15^d 16^h See Plate III.

15^d $18\frac{1}{2}^h$ to 20^h Irregular double-crested waves in Dec. (− 8′) and H.F. (+ ·0037). $21\frac{3}{4}^h$ to $22\frac{3}{4}^h$ Irregular wave in Dec. (+ 6′). $21\frac{3}{4}^h$ to 22^h Sharp increase in H.F. (+ ·0019). 22^h to 24^h Wave in V.F. (− ·0003). $23\frac{1}{4}^h$ to $23\frac{3}{4}^h$ Wave in Dec. (− 3′).

16^d $3\frac{1}{2}^h$ to 5^h Wave in H.F. (+ ·0017). $4\frac{1}{2}^h$ to $8\frac{3}{4}^h$ Irregular triple wave in Dec. (− 3′, + 6′, − 4′). $5\frac{1}{4}^h$ to $6\frac{3}{4}^h$ Wave in H.F. (− ·0011). $12\frac{1}{2}^h$ to $13\frac{1}{2}^h$ Wave in H.F. (− ·0013). 17^h to $18\frac{1}{4}^h$ Wave in Dec. (− 6′). $17\frac{1}{4}^h$ to 19^h Double wave in H.F. (− ·0014 to + ·0012): the first two movements steep. 16^d $22\frac{1}{2}^h$ to 17^d $0\frac{1}{4}^h$ Slow wave in Dec. (− 3′).

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May 17^d 13^h to 14^h Wave in H.F. (− ·0019). 15^h to $16\frac{1}{4}^h$ Wave in H.F. (+ ·0011).

18^d $22\frac{1}{4}^h$ to $23\frac{1}{2}^h$ Wave in Dec. (+ 3′).

19^d 17^h to 18^h Wave in Dec. (− 3′). 17^h to $17\frac{3}{4}^h$ Wave in H.F. (− ·0012). 17^h to 18^h Increase in V.F. (+ ·0003). 19^h to $19\frac{3}{4}^h$ Wave in Dec. (− 4′), steep at commencement. 19^h to 20^h Wave in H.F. (+ ·0020). $22\frac{1}{2}^h$ to $23\frac{1}{2}^h$ Wave in H.F. (+ ·0020): decrease in V.F. (− ·0004). $22\frac{3}{4}^h$ to $23\frac{3}{4}^h$ Wave in Dec. (+ 4′).

20^d 16^h to $17\frac{1}{4}^h$ Wave in H.F. (+ ·0010).

21^d $9\frac{1}{2}^h$ to $10\frac{1}{2}^h$ Flat-crested wave in H.F. (− ·0010). $14\frac{1}{4}^h$ to 16^h Two successive flat-crested waves in H.F. (− ·0013 and − ·0017). $17\frac{1}{4}^h$ to $18\frac{1}{2}^h$ Flat-crested wave in H.F. (+ ·0010). $20\frac{1}{2}^h$ to $21\frac{1}{2}^h$ Waves in Dec. (+ 3′) and H.F. (+ ·0018). $20\frac{1}{2}^h$ to $21\frac{1}{4}^h$ Decrease in V.F. (− ·0003).

22^d $14\frac{1}{2}^h$ to $15\frac{1}{2}^h$ Loss of V.F. register. $17\frac{1}{2}^h$ to $19\frac{1}{4}^h$ Loss of V.F. register.

23^d $22\frac{1}{4}^h$ to 24^d $0\frac{1}{2}^d$ Irregular double wave in Dec. (+ 4′ to − 7′). $22\frac{1}{2}^h$ to $23\frac{3}{4}^h$ Wave in V.F. (− ·0003).

25^d $15\frac{1}{4}^h$ to $18\frac{1}{2}^h$ Septuple wave in H.F. (+ ·0017, − ·0013, + ·0012, − ·0014, + ·0028, − ·0008, + ·0009), the second portion double-crested, the third triple-crested: small waves in Dec.

26^d $1\frac{1}{4}^h$ to $2\frac{1}{2}^h$ Double-crested wave in Dec. (+ 7′), steep at commencement: wave in H.F. (+ ·0010). $1\frac{1}{2}^h$ to 2^h Sharp increase in V.F., with slower decrease (+ ·0001 and − ·0003). $14\frac{3}{4}^h$ to $16\frac{1}{2}^h$ Flat-crested wave in H.F. (− ·0016).

27^d $2\frac{1}{4}^h$ to $3\frac{1}{2}^h$ Wave in Dec. (+3′). $2\frac{1}{2}^h$ to 4^h Wave in H.F. (+ ·0011). $2\frac{3}{4}^h$ to 5^h Slow wave in V.F. (− ·0003).

28^d $1\frac{1}{2}^h$ to 3^h Wave in Dec. (+ 6′). $15\frac{3}{4}^h$ to 17^h Wave in H.F. (− ·0012).

30^d $16\frac{1}{4}^h$ to 17^h Sharp wave in H.F. (− ·0017). $20\frac{3}{4}^h$ to $21\frac{1}{4}^h$ Wave in Dec. (− 3′). $22\frac{1}{2}^h$ to 23^h Sharp wave in H.F. (+ ·0010).

31^d 0^h to $1\frac{1}{4}^h$ Wave in Dec. (+ 3′): in H.F. small. $1\frac{1}{2}^h$ to $2\frac{1}{2}^h$ Truncated wave in Dec. (+ 8′). $1\frac{1}{2}^h$ to $3\frac{1}{4}^h$ Irregular triple-crested wave in H.F. (+ ·0014): wave in V.F. (− ·0003). $4\frac{3}{4}^h$ to $5\frac{1}{2}^h$ Wave in Dec. (− 3′). 6^h to $7\frac{1}{2}^h$ Wave in H.F. (− ·0011). $10\frac{1}{4}^h$ to $10\frac{1}{2}$ Sharp wave in H.F. (+ ·0010). $17\frac{1}{2}^h$ to 19^h Two successive waves in H.F. (+ ·0010 and + ·0013).

June 1^d $0\frac{1}{2}^h$ to $2\frac{3}{4}^h$ Irregular double wave in Dec. (− 2′ to + 4′). 15^h to 18^h Irregular triple wave in H.F. (− ·0011, + ·0012, − ·0010).

3^d $20\frac{1}{2}^h$ to 5^d $20\frac{1}{2}^h$ Loss of Dec. register.

4^d $17\frac{1}{2}^h$ to $18\frac{1}{2}^h$ Irregular wave in H.F. (+ ·0011), followed till $20\frac{1}{4}^h$ by a double wave (+ ·0012 to − ·0024), both portions double-crested. $17\frac{1}{2}^h$ to 22^h Wave in V.F. (+ ·0007). $20\frac{1}{2}^h$ to $21\frac{1}{2}^h$ Truncated wave in H.F. (− ·0015). 4^d $22\frac{1}{2}^h$ to 5^d $0\frac{1}{2}^h$ Two successive waves in H.F. (+ ·0019 and + ·0017). $22\frac{3}{4}^h$ to $23\frac{3}{4}^h$ Wave in V.F. (− ·0005).

5^d $7\frac{3}{4}^h$ to $9\frac{1}{2}^h$ Quadruple-crested wave in H.F. (− ·0015). $15\frac{1}{2}^h$ to $17\frac{1}{4}^h$ Irregular wave in H.F. (− ·0017). $21\frac{1}{4}^h$ to $23\frac{3}{4}^h$ Flat-crested wave in H.F. (− ·0010). 23^h to 24^h Wave in Dec. (+ 3′).

6^d $19\frac{1}{2}^h$ to $20\frac{1}{2}^h$ Wave in H.F. (+ ·0012): in Dec. small.

7^d $0\frac{1}{2}^h$ to 2^h Wave in Dec. (+ 4′). $0\frac{1}{2}^h$ to 4^h Slow wave in V.F. (− ·0003).

9^d 20^h to 21^h Sharp wave in H.F. (+ ·0022), followed till 23^h by a double wave (+ ·0020 to − ·0018). 22^h to $22\frac{1}{4}^h$ Sharp decrease in Dec. (− 12′), followed till 23^h by slower return (+ 6′).

10^d 0^h to $2\frac{3}{4}^h$ Triple wave in Dec. (− 4′, + 6′, − 4′). 1^h to 2^h Sharp truncated wave in H.F. (+ ·0016). 1^h to $2\frac{1}{2}^h$ Truncated wave in V.F. (− ·0005). $3\frac{1}{2}^h$ to $4\frac{1}{2}^h$ Double-crested wave in Dec. (− 3′). 4^h to $5\frac{1}{2}^h$ Irregular double-crested wave in H.F. (− ·0011). $6\frac{3}{4}^h$ to $8\frac{1}{2}^h$ Flat-crested wave in H.F. (− ·0013). $14\frac{1}{2}^h$ to $14\frac{3}{4}^h$ Very sharp double-crested wave in H.F. (+ ·0014). $16\frac{3}{4}^h$ to 18^h Sharp double-crested wave in H.F. (+ ·0014). $20\frac{1}{4}^h$ to 21^h Wave in H.F. (− ·0010). 22^h to $23\frac{1}{2}^h$ Irregular double-crested wave in Dec. (+ 9′), very steep at commencement. 22^h to 24^h Wave in V.F. (− ·0004).

11^d $0\frac{1}{4}^h$ to 1^h Wave in H.F. (+ ·0013). $0\frac{1}{4}^h$ to $1\frac{3}{4}^h$ Decrease in V.F. (− ·0006). $0\frac{3}{4}^h$ to $1\frac{3}{4}^h$ Wave in Dec. (− 3′). $1\frac{3}{4}^h$ to $5\frac{1}{4}^h$ Irregular double wave in H.F. (+ ·0022 to − ·0013). 5^h to $7\frac{3}{4}^h$ Slow wave in Dec. (− 7′), with two very sharp waves superposed at 7^h (− 3′ and − 5′). $7\frac{3}{4}^h$ to 8^h Decrease in Dec. (− 4′). $16\frac{1}{2}^h$ to $17\frac{3}{4}^h$ Truncated wave in Dec. (− 4′). $16\frac{3}{4}^h$ to 18^h Irregular wave in H.F. (+ ·0023). 19^h to 21^h Wave in H.F. (+ ·0020).

12^d $21\frac{3}{4}^h$ to $22\frac{1}{2}^h$ Wave in H.F. (+ ·0011): small double wave in Dec.

13^d $0\frac{1}{4}^h$ to $1\frac{3}{4}^h$ Wave in Dec. (+ 3′). 14^h to 16^h Double wave in H.F. (− ·0013 to + ·0010).

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$14^d\ 21\frac{3}{4}^h$ to $22\frac{1}{4}^h$ Wave in Dec. (+ 5′) and H.F. (+ ·0012). $14^d\ 23^h$ to $15^d\ 2\frac{1}{2}^h$ Irregular triple wave in Dec. (− 3′, + 4′, − 3′). $14^d\ 23\frac{3}{4}^h$ to $15^d\ 0\frac{1}{4}^h$ Wave in H.F. (− ·0010).

$15^d\ 0^h$ to $0\frac{1}{2}^h$ Decrease in V.F. (− ·0003). 1^h to $2\frac{1}{4}^h$ Wave in H.F. (+ ·0010). $19\frac{1}{4}^h$ to $20\frac{3}{4}^h$ Wave in Dec. (− 3′).

$16^d\ 19\frac{3}{4}^h$ to $20\frac{1}{2}^h$ Wave in H.F. (+ ·0010).

$21^d\ 12\frac{3}{4}^h$ to $13\frac{1}{2}^h$ Wave in H.F. (+ ·0015), with superposed fluctuations. 14^h to 15^h Two successive sharp waves in H.F. (+ ·0012 and + ·0013). $15\frac{1}{2}^h$ to $15\frac{3}{4}^h$ Sharp wave in H.F. (+ ·0012), followed till 17^h by very sharp fluctuations (+ ·0008): small sharp fluctuations in Dec. 18^h to 19^h Wave in H.F. (+ ·0012). 20^h to 21^h Wave in Dec. (− 5′). $20\frac{1}{4}^h$ to 21^h Wave in H.F. (+ ·0011). $22\frac{1}{4}^h$ to $23\frac{1}{2}^h$ Wave in H.F. (+ ·0013): small wave in V.F.

$22^d\ 0\frac{3}{4}^h$ to $2\frac{1}{4}^h$ Wave in H.F. (− ·0013). 1^h to $2\frac{1}{2}^h$ Wave in Dec. (+ 5′). 4^h to $5\frac{1}{4}^h$ Wave in Dec. (+ 3′). $18\frac{1}{4}^h$ to $19\frac{1}{2}^h$ Wave in H.F. (− ·0011).

$23^d\ 13\frac{1}{4}^h$ to $14\frac{1}{2}^h$ Wave in H.F. (− ·0020), steep at commencement. 18^h to $19\frac{1}{2}^h$ Wave in H.F. (+ ·0013). $19\frac{1}{2}^h$ to $20\frac{3}{4}^h$ Double-crested wave in Dec. (− 5′). $19\frac{3}{4}^h$ to $20\frac{1}{2}^h$ Wave in H.F. (+ ·0012). 23^h to 24^h Wave in Dec. (− 3′).

$28^d\ 12\frac{1}{4}^h$ to $13\frac{1}{2}^h$ Wave in H.F. (− ·0013).

$30^d\ 23^h$ to $23\frac{1}{2}^h$ Decrease in Dec. (− 6′).

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$1^d\ 2^h$ to $3\frac{3}{4}^h$ Two successive irregular waves in Dec. (− 4′ and − 3′). $5\frac{1}{2}^h$ to $6\frac{1}{2}^h$ Wave in Dec. (+ 4′), with very sharp superposed fluctuations. 12^h to $13\frac{1}{4}^h$ Double-crested wave in H.F. (− ·0015), followed till $14\frac{1}{4}^h$ by an irregular truncated wave (− ·0024), followed till $16\frac{1}{4}^h$ by a triple wave (− ·0011, + ·0053, − ·0030), the third movement very sharp. $14\frac{1}{2}^h$ to $16\frac{1}{4}^h$ Double wave in Dec. (+ 5′ to − 4′): small wave in V.F. $16\frac{1}{2}^h$ to 17^h Wave in H.F. (+ ·0012). $17\frac{1}{2}^h$ to 18^h Increase in H.F. (+ ·0014). $20\frac{3}{4}^h$ to $22\frac{1}{4}^h$ Irregular wave in Dec. (− 5′). 21^h to $22\frac{1}{4}^h$ Wave in H.F. (+ ·0017).

$2^d\ 1^h$ to 4^h Wave in V.F. (− ·0003). $1\frac{1}{2}^h$ to $2\frac{1}{4}^h$ Wave in Dec. (+ 4′). $1\frac{1}{2}^h$ to $2\frac{3}{4}^h$ Wave in H.F. (− 0014). $17\frac{1}{2}^h$ to $18\frac{3}{4}^h$ Wave in H.F. (− ·0012).

$3^d\ 15\frac{3}{4}^h$ to $16\frac{1}{2}^h$ Wave in H.F. (+ ·0010). $17\frac{3}{4}^h$ to $18\frac{1}{4}^h$ Wave in H.F. (− ·0012).

$4^d\ 16\frac{1}{4}^h$ to $16\frac{3}{4}^h$ Wave in H.F. (+ ·0010). $17\frac{1}{4}^h$ to $18\frac{3}{4}^h$ Flat-crested wave in Dec. (− 3′). $21\frac{1}{2}^h$ to $22\frac{1}{4}^h$ Wave in H.F. (+ ·0012).

$5^d\ 18^h$ to 20^h Wave in H.F. (+ ·0011).

$6^d\ 9^h$ to $9\frac{3}{4}^h$ Decrease in V.F. (− ·0004). $13\frac{1}{2}^h$ to 14^h Sharp wave in H.F. (+ ·0010): in Dec. small. $14\frac{3}{4}^h$ to $16\frac{3}{4}^h$ Double-crested wave in H.F. (− ·0018).

$7^d\ 3\frac{3}{4}^h$ to $4\frac{3}{4}^h$ Wave in Dec. (− 3′): in V.F. small. $7\frac{1}{2}^h$ to $12\frac{1}{2}^h$ Loss of Dec. register. $13\frac{3}{4}^h$ to $14\frac{1}{2}^h$ Wave in H.F. (− ·0012). $14\frac{1}{2}^h$ to $16\frac{1}{4}^h$ Wave in Dec. (− 4′). $14\frac{3}{4}^h$ to $17\frac{1}{4}^h$ Three successive waves in H.F. (+ ·0013, + ·0018, + ·0016).

$8^d\ 0^h$ to 5^h Wave in V.F. (− ·0007). $0\frac{1}{2}^h$ to $2\frac{1}{2}^h$ Wave in H.F. (+ ·0013). 1^h to 3^h Double wave in Dec. (− 4′ to + 4′). $8\frac{1}{2}^h$ to 10^h Wave in H.F. (− ·0014). 13^h to $14\frac{1}{4}^h$ Wave in H.F. (− ·0015). 15^h to $17\frac{3}{4}^h$ Two successive double-crested waves in H.F. (+ ·0014 and + ·0019). 16^h to $16\frac{1}{2}^h$ Sharp irregular decrease in Dec. (− 6′).

$10^d\ 22\frac{1}{2}^h$ to $23\frac{1}{4}^h$ Sharp irregular waves in Dec. (− 5′) and H.F. (+ 0020).

$11^d\ 20\frac{1}{2}^h$ to 22^h Wave in Dec. (− 3′).

$12^d\ 7\frac{1}{2}^h$ to $8\frac{1}{2}^h$ Wave in H.F. (− ·0010). $12^d\ 23\frac{3}{4}^h$ to $13^d\ 1^h$ Wave in Dec. (+ 3′).

$17^d\ 17\frac{1}{2}^h$ to $18\frac{1}{2}^h$ Double-crested wave in H.F. (+ ·0020). $19\frac{1}{2}^h$ to $20\frac{1}{2}^h$ Wave in Dec. (− 3′). $21\frac{1}{2}^h$ to 23^h Double-crested wave in H.F. (+ ·0020). $21\frac{3}{4}^h$ to 24^h Double wave in Dec. (+ 3′ to − 9′). $21\frac{3}{4}^h$ to $22\frac{1}{2}^h$ Decrease in V.F. (− ·0005).

$18^d\ 14\frac{3}{4}^h$ to $15\frac{1}{2}^h$ Decrease in H.F. and sharp increase (− ·0012, + ·0022). $19\frac{1}{4}^h$ to 20^h Wave in Dec. (− 4′). $19\frac{1}{2}^h$ to $20\frac{1}{4}^h$ Wave in H.F. (+ ·0016). $21\frac{3}{4}^h$ to $22\frac{3}{4}^h$ Wave in Dec. (− 5′). 22^h to 23^h Double-crested wave in H.F. (+ ·0012).

$19^d\ 0\frac{1}{4}^h$ to $3\frac{3}{4}^h$ Irregular triple wave in Dec. (− 3′, + 9′, − 3′). $1\frac{3}{4}^h$ to $3\frac{3}{4}^h$ Flat-crested wave in H.F. (+ ·0016). 2^h to 4^h Wave in V.F. (− ·0004). $4\frac{3}{4}^h$ to $5\frac{3}{4}^h$ Wave in H.F. (− ·0011). $5\frac{1}{4}^h$ to $6\frac{1}{2}^h$ Wave in Dec. (+ 4′). 8^h to 12^h Two successive waves in H.F. (− ·0017 and − ·0015). $14\frac{3}{4}^h$ to $16\frac{1}{4}^h$ Triple-crested wave in H.F. (+ ·0019). $20\frac{3}{4}^h$ to $21\frac{1}{4}^h$ Wave in H.F. (+ ·0012): small double wave in Dec. $19^d\ 23\frac{1}{2}^h$ to $20^d\ 1^h$ Wave in Dec. (+ 3′).

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July 20^d $6\frac{3}{4}^h$ to 8^h Truncated wave in H.F. (− ·0011).

21^d $20\frac{1}{2}^h$ to 22^h Wave in H.F. (+ ·0012).

22^d $15\frac{1}{2}^h$ to 17^h Wave in H.F. (+ ·0014).

24^d $12\frac{1}{2}^h$ to $13\frac{1}{2}^h$ Wave in H.F. (− ·0017): in Dec. small. 14^h to 15^h Wave in H.F. (+ ·0010). $16\frac{1}{2}^h$ to $17\frac{1}{4}^h$ Wave in H.F. (+ ·0012).

27^d 19^h to $20\frac{1}{2}^h$ Wave in H.F. (− ·0010). 27^d $23\frac{1}{4}^h$ to 28^d $0\frac{1}{2}^h$ Wave in H.F. (+ ·0014).

28^d 5^h to $6\frac{1}{4}^h$ Wave in H.F. (+ ·0010). 6^h to 7^h Double-crested wave in Dec. (− 3′). $10\frac{3}{4}^h$ to $12\frac{1}{4}^h$ Irregular wave in H.F. (− ·0016). $12\frac{3}{4}^h$ Increase in H.F. (+ ·0010). 13^h to $14\frac{1}{2}^h$ Double-crested wave in Dec. (+ 4′). $13\frac{1}{4}^h$ to 15^h Irregular double-crested wave in H.F. (− ·0025). $15\frac{1}{4}^h$ to $17\frac{1}{4}^h$ Irregular triple-crested wave in H.F. (− ·0020). $17\frac{1}{2}^h$ to $19\frac{1}{4}^h$ Sharp triple wave in H.F. (+ ·0043, − ·0017, + ·0030). 18^h to $18\frac{1}{4}^h$ Sharp wave in Dec. (− 5′). $18\frac{1}{2}^h$ to $21\frac{1}{2}^h$ Irregular quadruple-crested wave in Dec. (− 10′). $19\frac{1}{2}^h$ to $20\frac{1}{4}^h$ Wave in H.F. (+ ·0012). $20\frac{1}{2}^h$ to $21\frac{1}{4}^h$ Wave in H.F. (− ·0012). $22\frac{1}{2}^h$ to 23^h Wave in H.F. (− ·0013). 28^d $22\frac{3}{4}^h$ to 29^d 1^h Irregular triple wave in Dec. (− 4′, + 9′, − 6′). 28^d $23\frac{1}{2}^h$ to 29^d $0\frac{1}{4}^h$ Decrease in V.F. (− ·0007).

29^d $1\frac{1}{4}^h$ to $2\frac{3}{4}^h$ Wave in Dec. (− 3′). $2\frac{3}{4}^h$ to 4^h Wave in H.F. (+ ·0015). 13^h to $13\frac{1}{2}^h$ Wave in H.F. (− ·0010). $15\frac{3}{4}^h$ to $16\frac{3}{4}^h$ Wave in H.F. (− ·0012). $18\frac{1}{4}^h$ to 19^h Wave in Dec. (− 3′): small double wave in H.F. $22\frac{1}{4}^h$ to $23\frac{1}{4}^h$ Wave in H.F. (+ ·0010).

30^d 15^h to 16^h Wave in H.F. (− ·0013). $18\frac{1}{4}^h$ to $19\frac{1}{4}^h$ Waves in Dec. (− 3′) and H.F. (+ ·0015).

August 3^d $13\frac{3}{4}^h$ to $15\frac{1}{4}^h$ Double wave in H.F. (+ ·0013 to − ·0008). 21^h to 22^h Wave in H.F. (+ ·0011).

4^d $0\frac{1}{2}^h$ to 4^h Slow double wave in Dec. (+ 3′ to − 3′). $21\frac{3}{4}^h$ to 23^h Wave in H.F. (+ ·0018): in Dec. small.

5^d $1\frac{1}{2}^h$ to 3^h Wave in Dec. (+ 7′). 19^h to $19\frac{3}{4}^h$ Wave in H.F. (+ ·0014). $21\frac{3}{4}^h$ to $23\frac{1}{4}^h$ Double-crested wave in H.F. (+ ·0016). $22\frac{1}{4}^h$ to 23^h Decrease in V.F. (− ·0004). 5^d $22\frac{3}{4}^h$ to 6^d $3\frac{1}{2}^h$ Slow triple-crested wave in Dec. (− 9′).

13^d 5^h to 9^h Slow flat-crested wave in Dec. (− 7′).

18^d $0\frac{3}{4}^h$ to $2\frac{1}{2}^h$ Wave in Dec. (+ 5′).

19^d $12\frac{1}{4}^h$ to 13^h Truncated wave in H.F. (+ ·0012): in Dec. small. 16^h to $17\frac{3}{4}^h$ Two successive waves in H.F. (− ·0014 and − ·0010). $21\frac{1}{4}^h$ to $21\frac{1}{2}^h$ Decrease in Dec. (− 4′). $22\frac{3}{4}^h$ to $23\frac{1}{4}^h$ Decrease in H.F. (− ·0012).

20^d $3\frac{3}{4}^h$ to 5^h Wave in Dec. (+ 3′).

23^d $9\frac{3}{4}^h$ to $10\frac{1}{4}^h$ Increase in Dec. (+ 7′). $12\frac{3}{4}^h$ to $13\frac{3}{4}^h$ Triple-crested wave in Dec. (− 3′). $13\frac{1}{4}^h$ to $14\frac{1}{4}^h$ Double wave in H.F. (+ ·0016 to − ·0018), followed till $14\frac{3}{4}$ by a decrease (− ·0016), followed till $15\frac{1}{2}^h$ by a sharp double wave (+ ·0030 to − ·0025), followed till $16\frac{1}{2}^h$ by a sharp triple wave (− ·0012, + ·0013, − ·0018). 14^h to 15^h Increase in V.F. (+ ·0010). $14\frac{1}{4}^h$ Increase in Dec. (+ 3′). $14\frac{1}{2}^h$ to $14\frac{3}{4}^h$ Sharp decrease in Dec. (− 12′), followed till $15\frac{3}{4}^h$ by a sharp triple wave (+ 3′, − 5′, + 3′). 17^h to $17\frac{1}{2}^h$ Sharp wave in H.F. (− ·0015). $17\frac{1}{4}^h$ to $18\frac{1}{2}^h$ Wave in Dec. (− 5′). 20^h to $22\frac{1}{2}^h$ Triple-crested wave in H.F. (+ ·0025), followed till 24^d $1\frac{1}{4}^h$ by a triple wave (+ ·0017, − ·0017, + ·0020). $20\frac{3}{4}^h$ to 24^h Double wave in Dec. (− 6′ to + 15′), the first portion triple-crested, the rest steep. $20\frac{3}{4}^h$ to $22\frac{1}{4}$ Decrease in V.F. (− ·0007). 23^d $23\frac{1}{4}^h$ to 24^d 3^h Wave in V.F. (− ·0009), steep at commencement.

24^d 0^h to $0\frac{1}{2}^h$ Wave in Dec. (− 3′). $1\frac{3}{4}^h$ to 2^h Decrease in Dec. (− 4′). $2\frac{1}{2}^h$ to 3^h Increase in Dec. (+ 6′). $8\frac{1}{2}^h$ to 10^h Wave in H.F. (− ·0016). $14\frac{1}{2}^h$ to $15\frac{1}{2}^h$ Waves in Dec. (− 3′) and H.F. (+ ·0016). $15\frac{1}{2}^h$ to $16\frac{3}{4}^h$ Wave in Dec. (− 4′). $17\frac{1}{4}^h$ to $18\frac{3}{4}^h$ Double-crested wave in Dec. (− 7′). $17\frac{3}{4}^h$ to $19\frac{1}{4}^h$ Wave in H.F. (+ ·0016). $19\frac{1}{2}^h$ to 21^h Irregular double-crested wave in H.F. (+ ·0020). $19\frac{3}{4}^h$ to $20\frac{1}{4}^h$ Double-crested wave in Dec. (− 4′). $20\frac{3}{4}^h$ to 21^h Increase in Dec. (+ 3′). $22\frac{3}{4}^h$ to 24^h Wave in Dec. (− 3′).

25^d $0\frac{1}{2}^h$ to $2\frac{1}{4}^h$ Double-crested wave in Dec. (− 3′). $11\frac{1}{2}^h$ to 14^h Slow wave in Dec. (+ 4′). $13\frac{1}{2}^h$ to $15\frac{1}{2}^h$ Wave in H.F. (+ ·0013). 16^h to 18^h Slow wave in Dec. (− 3′). 25^d $23\frac{1}{4}^h$ to 26^d $0\frac{3}{4}^h$ Truncated wave in Dec. (+ 4′).

26^d 14^h to 15^h Wave in H.F. (− ·0018). $14\frac{3}{4}^h$ to $15\frac{3}{4}^h$ Truncated wave in Dec. (− 4′). 17^h to 19^h Truncated wave in Dec. (− 4′). $17\frac{1}{4}^h$ to 19^h Wave in H.F. (+ ·0012). $21\frac{1}{2}^h$ to $23\frac{1}{4}^h$ Wave in H.F. (+ ·0022). $21\frac{3}{4}^h$ to $22\frac{1}{4}^h$ Wave in Dec. (− 4′).

27^d 1^h to 3^h Irregular wave in Dec. (+ 7′). $14\frac{1}{2}^h$ to 16^h Flat-crested wave in H.F. (− ·0010). $15\frac{1}{2}^h$ to $16\frac{1}{4}^h$ Wave in Dec. (− 3′). $16\frac{3}{4}^h$ to $18\frac{1}{4}^h$ Double wave in H.F. (− ·0012 to + ·0012). 17^h to $18\frac{1}{4}^h$ Wave in Dec. (− 5′). 22^h to $23\frac{1}{2}^h$ Wave in H.F. (+ ·0022).

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August 28^d 1^h to 2¼^h Irregular wave in Dec. (− 3′). 15½^h to 16¾^h Wave in H.F. (− ·0013). 19¼^h to 21¾^h Truncated wave in Dec. (− 5′).

30^d 2^h to 3¼^h Wave in Dec. (+ 3′).

31^d 15¾^h to 16¼^h Wave in H.F. (+ ·0012). 20¾^h to 21½^h Wave in Dec. (− 3′).

September 1^d 0^h to 2^h Slow wave in Dec. (+ 4′)

11^d 12^h to 13½^h Wave in H.F. (− ·0014). 16^h to 17^h Wave in H.F. (− ·0010). 20^h to 22½^h Irregular truncated wave in Dec. (− 8′): double-crested wave in H.F. (+ ·0017).

12^d 4½^h to 5¾^h Wave in H.F. (+ ·0010). 15¼^h to 16¼^h Truncated wave in H.F. (− ·0010). 20^h to 21½^h Irregular wave in Dec. (− 5′).

15^d 9^h to 10½^h Loss of Dec.: H.F. and V.F. registers. 20^h to 21¼^h Wave in Dec. (− 3′). 21½^h to 22¼^h Wave in H.F. (+ ·0015).

16^d 1^h to 2½^h Wave in Dec. (+ 4′). 2¾^h to 4½^h Wave in H.F. (− ·0010). 12¼^h to 13¼^h Wave in H.F. (− ·0018). 12½^h to 13^h Wave in Dec. (+ 3′). 15¾^h to 17¼^h Wave in H.F. (− ·0020). 16¼^h to 16¾^h Decrease in Dec. (− 6′). 23¼ to 24^h Wave in H.F. (+ ·0011).

17^d 1¼^h to 3^h Flat-crested wave in Dec. (− 3′). 18¾^h to 19^h Decrease in Dec. (− 4′). 22^h to 23^h Wave in Dec. (+ 6′).

19^d 20½^h to 22^h Irregular wave in Dec. (− 8′). 20½^h to 23½^h Two successive waves in H.F. (+ ·0014 and + ·0013).

20^d 1½^h to 2^h Wave in Dec. (− 3′), followed till 5^h by an irregular triple wave (− 4′, + 9′, − 4′). 3^h to 9^h Wave in V.F. (− ·0008), with crest at 4^h. 3¼^h to 5^h Truncated wave in H.F. (+ ·0022). 6^h to 7¼^h Irregular decrease in H.F. (− ·0036). 9¼^h to 11½^h Irregular wave in H.F. (− ·0021). 10^h to 13^h Wave in Dec. (+ 6′). 14½^h to 16^h Wave in Dec. (− 8′), sharp at commencement: double wave in H.F. (− ·0025 to + ·0016), the first two movements sharp. 17^h to 19^h Irregular wave in Dec. (− 10′) followed till 20^h by another (− 10′), both steep at commencement. 17¼^h to 18¼^h Irregular sharp wave in H.F. (+ ·0025). 19^h to 20¾^h Triple wave in H.F. (− ·0013, + ·0014, − ·0010). 21½^h to 22^h Increase in Dec. (+ 5′). 20^d 23½^h to 21^d 2^h Two successive waves in Dec. (−4′ and − 5′).

21^d 6½^h to 7¼^h Decrease in H.F. (− ·0024). 8^h to 9¼^h Wave in Dec. (− 3′). 14¼^h to 15½^h Wave in Dec. (− 5′), followed till 16^h by an irregular decrease (− 4′). 14¼^h to 15^h Double-crested wave in H.F. (− ·0014). 14¾^h to 18½^h Wave in V.F. (+ ·0005). 16^h to 16¾^h Double-crested wave in H.F. (− ·0010). 17¼^h to 18^h Sharp decrease and increase in Dec. (− 15′, + 11′): sharp movements in H.F. (− ·0013, + ·0053, − ·0019). 18½^h to 18¾^h Decrease in H.F. (− ·0013). 18¾^h to 19¼^h Increase in Dec. (+ 4′). 22^h to 24^h Double waves in Dec. (+ 4′ to − 2′) and H.F. (+ ·0012 to − ·0012): small wave in V.F.

22^d 1¾^h to 2¼^h Wave in Dec. (+ 3′). 3^h to 6^h Irregular double wave in H.F. (+ ·0011 to − ·0010). 5^h to 7^h Flat-crested wave in Dec. (+ 4′). 8½^h to 12^h Wave in H.F. (− ·0033). 16½^h to 17¼^h Wave in H.F. (− ·0020). 16¾^h to 17½^h Wave in Dec. (− 4′). 17¾^h to 19½^h Double wave in H.F. (− ·0010 to + ·0011). 18½^h to 19¾^h Wave in Dec. (− 6′). 22^d 23¼^h to 23^d 0¼^h Wave in Dec. (+ 7′). 23¼^h Sudden increase in H.F. (+ ·0010): in V.F. small.

23^d 16^h to 16¾^h Wave in Dec. (− 3′). 19¾^h to 21½^h Irregular double-crested wave in Dec. (− 6′). 20^h to 21^h Wave in H.F. (+ ·0013).

27^d 0¼^h to 2^h Irregular wave in Dec. (+ 5′): in H.F. small.

29^d 11½^h to 16½^h Loss of V.F. register.

October 3^d 17½^h to 18½^h Flat-crested wave in Dec. (− 3′). 19¾^h to 20¾^h Waves in Dec. (− 4′) and H.F. (+ ·0013).

4^d 23^h to 24^h Wave in Dec. (− 3′).

5^d 0^h to 1½^h Wave in Dec. (− 3′).

7^d 0¼^h to 1¼^h Wave in H.F. (+ ·0010).

8^d 0½^h to 1½^h Wave in Dec. (+ 3′). 0¾^h to 2^h Wave in H.F. (+ ·0010).

9^d 1½^h to 3¼^h Flat-crested wave in Dec. (+ 4′). 2½^h to 3¾^h Wave in H.F. (+ ·0010). 4½^h to 6¼^h Wave in H.F. (− ·0012). 5^h to 7¼^h Wave in Dec. (+ 5′). 14¾^h to 16^h Truncated wave in H.F. (− ·0014). 15^h to 16¼^h Wave in Dec. (− 4′). 22¾^h to 23½^h Wave in H.F. (+ ·0013).

10^d 8^h to 11^d 8^h See Plate III.

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October 12^{d} $22\frac{1}{2}^{h}$ to $23\frac{3}{4}^{h}$ Wave in H.F. (+ ·0010).

13^{d} 20^{h} to 22^{h} Two successive waves in H.F. (+ ·0010 and + ·0012). $20\frac{1}{4}^{h}$ to $21\frac{1}{4}^{h}$ Wave in Dec. (− 3′).

14^{d} 1^{h} to 3^{h} Slow wave in Dec. (+ 3′). 14^{d} $23\frac{1}{4}^{h}$ to 15^{d} $0\frac{1}{4}^{h}$ Wave in Dec. (+ 4′).

16^{d} 15^{h} to $16\frac{1}{2}^{h}$ Loss of H.F. and V.F. registers. 16^{h} to $16\frac{1}{2}^{h}$ Wave in Dec. (− 3′). $19\frac{1}{4}^{h}$ to 20^{h} Wave in Dec. (− 3′).

17^{d} $9\frac{1}{4}^{h}$ to $11\frac{1}{4}^{h}$ Wave in H.F. (− ·0015). 10^{h} to $10\frac{3}{4}^{h}$ Wave in Dec. (+ 3′). $14\frac{1}{4}^{h}$ to 16^{h} Two successive waves in H.F. (− ·0010 and − ·0010). $15\frac{3}{4}^{h}$ to $16\frac{1}{2}^{h}$ Wave in Dec. (− 4′). $16\frac{3}{4}^{h}$ to $17\frac{1}{2}^{h}$ Wave in Dec. (− 3′). 17^{h} to $17\frac{3}{4}^{h}$ Wave in H.F. (+ ·0010). $20\frac{1}{2}^{h}$ to $21\frac{1}{2}^{h}$ Irregular wave in H.F. (+ ·0013): small double wave in Dec.

18^{d} $7\frac{1}{4}^{h}$ to $11\frac{1}{4}^{h}$ Irregular double wave in Dec. (− 4′ to + 3′). $9\frac{3}{4}^{h}$ to $11\frac{1}{4}^{h}$ Double-crested wave in H.F. (− ·0018). $13\frac{1}{2}^{h}$ to $15\frac{3}{4}^{h}$ Two successive waves in H.F. (− ·0010 and − ·0012). 15^{h} to $16\frac{1}{2}^{h}$ Wave in Dec. (− 4′). 17^{h} to 19^{h} Double wave in H.F. (− ·0017 to + ·0015). $17\frac{1}{4}^{h}$ to $18\frac{1}{4}^{h}$ Wave in Dec. (− 7′). $19\frac{1}{2}^{h}$ to $21\frac{3}{4}^{h}$ Irregular double wave in Dec. (− 7′ to + 5′), followed till 23^{h} by a wave (+ 3′). $19\frac{3}{4}^{h}$ to $20\frac{1}{2}^{h}$ Irregular wave in H.F. (− ·0010). $20\frac{3}{4}^{h}$ to $22\frac{1}{2}^{h}$ Irregular double-crested wave in H.F. (+ ·0033). 21^{h} to $21\frac{3}{4}^{h}$ Sharp decrease in V.F. (− ·0007).

19^{d} $11\frac{1}{2}^{h}$ to $12\frac{1}{4}^{h}$ Wave in H.F. (− ·0012). 20^{h} to $22\frac{1}{2}^{h}$ Irregular wave in Dec. (− 7′). $20\frac{1}{2}^{h}$ to 22^{h} Triple-crested wave in H.F. (+ ·0013).

20^{d} $13\frac{3}{4}^{h}$ to $14\frac{3}{4}^{h}$ Wave in H.F. (− ·0012). 14^{h} to $14\frac{1}{2}^{h}$ Decrease in Dec. (− 4′). 20^{d} $23\frac{3}{4}^{h}$ to 21^{d} $1\frac{1}{4}^{h}$ Irregular waves in Dec. (+ 4′) and H.F. (+ ·0010).

21^{d} $20\frac{1}{2}^{h}$ to $21\frac{3}{4}^{h}$ Double wave in Dec. (+ 3′ to − 3′): two small waves in H.F.

22^{d} 18^{h} to $19\frac{1}{4}^{h}$ Wave in Dec. (− 6′). $21\frac{1}{2}^{h}$ to $22\frac{1}{4}^{h}$ Wave in H.F. (+ ·0015).

24^{d} $21\frac{3}{4}^{h}$ to 25^{d} $0\frac{1}{2}^{h}$ Flat-crested wave in Dec. (− 5′). 24^{d} 23^{h} to 25^{d} 2^{h} Irregular double wave in H.F. (− ·0010 to + ·0010).

25^{d} 20^{h} to 22^{h} Two successive waves in Dec. (− 5′ and − 3′). 20^{h} to $21\frac{1}{2}^{h}$ Two successive waves in H.F. (− ·0011 and − ·0013).

November 3^{d} 3^{h} to $4\frac{1}{2}^{h}$ Truncated wave in Dec. (− 3′). 9^{h} to $9\frac{3}{4}^{h}$ Decrease in V.F. (− ·0003). 13^{h} to 15^{h} Wave in H.F. (− ·0013). $18\frac{1}{2}^{h}$ to $19\frac{1}{4}^{h}$ Wave in H.F. (− ·0010). $18\frac{3}{4}^{h}$ to 20^{h} Truncated wave in Dec. (− 8′), steep at commencement.

5^{d} $0\frac{1}{2}^{h}$ to $1\frac{1}{2}^{h}$ Wave in Dec. (+ 3′).

8^{d} 21^{h} to 23^{h} Irregular wave in Dec. (− 6′). $21\frac{3}{4}^{h}$ to 24^{h} Slightly truncated wave in H.F. (− ·0021).

9^{d} 21^{h} to $23\frac{1}{2}^{h}$ Double-crested wave in Dec. (− 14′). $21\frac{1}{2}^{h}$ to 23^{h} Irregular wave in H.F. (+ ·0025).

10^{d} 0^{h} to 1^{h} Waves in Dec. (+ 5′), and H.F. (+ ·0016). $0\frac{1}{4}^{h}$ to 1^{h} Decrease in V.F. (− ·0003).

12^{d} $22\frac{1}{2}^{h}$ to 13^{d} 2^{h} Triple-crested wave in Dec. (− 6′). 12^{d} $23\frac{1}{4}^{h}$ to 13^{d} 1^{h} Irregular wave in H.F. (+ ·0020).

13^{d} $9\frac{1}{4}^{h}$ to 11^{h} Wave in H.F. (− ·0013). $11\frac{3}{4}^{h}$ to $12\frac{1}{2}^{h}$ Decrease in H.F. (− ·0020). $14\frac{1}{4}^{h}$ to $15\frac{1}{4}^{h}$ Double-crested wave in H.F. (− ·0012), followed till $17\frac{1}{2}^{h}$ by a triple wave (− ·0018, + ·0019, − ·0012). $14\frac{1}{2}^{h}$ to $15\frac{3}{4}^{h}$ Irregular wave in Dec. (− 6′), followed till $17\frac{3}{4}^{h}$ by an irregular double-crested wave (− 15′). 16^{h} to 17^{h} Wave in V.F. (+ ·0003). 18^{h} to $21\frac{1}{4}^{h}$ Irregular wave in Dec. (− 11′), followed till 22^{h} by a sharp wave (− 7′). $18\frac{1}{2}^{h}$ to $19\frac{1}{4}^{h}$ Wave in H.F. (+ ·0016), followed till $19\frac{1}{2}^{h}$ by an increase (+ ·0010). $19\frac{3}{4}^{h}$ to $22\frac{1}{2}^{h}$ Irregular double wave in H.F. (− ·0013 to + ·0023). 21^{h} to $21\frac{1}{2}^{h}$ Decrease in V.F. (− ·0004).

14^{d} $1\frac{1}{2}^{h}$ to 4^{h} Wave in Dec. (+ 6′). 11^{h} to 12^{h} Decrease in H.F. (− ·0028). 12^{h} to $13\frac{1}{2}^{h}$ Flat-crested wave in Dec. (+ 4′). 14^{h} to $15\frac{1}{2}^{h}$ Sharp double wave in H.F. (− ·0018 to + ·0017), followed till $6\frac{3}{4}^{h}$ by a truncated wave (+ ·0010). $14\frac{1}{4}^{h}$ to $16\frac{3}{4}^{h}$ Two successive waves in Dec. (− 10′ and − 5′). $14\frac{1}{4}^{h}$ to $15\frac{3}{4}^{h}$ Wave in V.F. (+ ·0003). 14^{d} $23\frac{1}{4}^{h}$ to 15^{d} $1\frac{3}{4}^{h}$ Double wave in Dec. (+ 8′ to − 3′). 14^{d} $23\frac{1}{2}^{h}$ to 15^{d} $0\frac{1}{4}^{h}$ Wave in H.F. (+ ·0016). 14^{d} $23\frac{3}{4}^{h}$ to 15^{d} $0\frac{1}{4}^{h}$ Decrease in V.F. (− ·0004).

15^{d} 13^{h} to 16^{h} Two successive waves in H.F. (− ·0011 and − ·0012). $15\frac{1}{2}^{h}$ to 16^{h} Wave in Dec. (− 3′). $18\frac{1}{2}^{h}$ to $20\frac{3}{4}^{h}$ Wave in Dec. (− 10′). 19^{h} to 20^{h} Wave in H.F. (+ ·0020). $23\frac{1}{4}^{h}$ to 24^{h} Wave in Dec. (+ 3′). 15^{d} $23\frac{1}{4}^{h}$ to 16^{d} $0\frac{1}{2}^{h}$ Wave in H.F. (+ ·0013). $23\frac{1}{2}^{h}$ to 24^{h} Decrease in V.F. (− ·0003).

17^{d} $17\frac{3}{4}^{h}$ to $18\frac{3}{4}^{h}$ Wave in H.F. (− ·0010). 18^{h} to $19\frac{1}{4}^{h}$ Wave in Dec. (− 5′). 17^{d} $23\frac{1}{4}^{h}$ to 18^{d} $1\frac{1}{4}^{h}$ Wave in H.F. (+ ·0010).

19^{d} $18\frac{1}{2}^{h}$ to 19^{h} Wave in H.F. (+ ·0010).

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November 21^d 9^h to 11^h Wave in H.F. ($-$ ·0011).

23^d 5$\frac{1}{4}^h$ to 16$\frac{1}{4}^h$ Loss of V.F. register.

26^d 1$\frac{1}{2}^h$ to 2^h Wave in Dec. ($+$ 3′).

27^d 19^h to 20$\frac{1}{2}^h$ Loss of Dec. H.F. and V.F. registers.

December 1^d 1^h to 2^h Waves in Dec. ($+$ 5′) and H.F. ($+$ ·0011). 1$\frac{1}{4}^h$ to 1$\frac{3}{4}^h$ Decrease in V.F. ($-$ ·0003).

6^d 11$\frac{3}{4}^h$ to 12$\frac{1}{4}^h$ Wave in Dec. ($+$ 3′). 16$\frac{1}{2}^h$ to 19$\frac{1}{4}^h$ Irregular triple wave in Dec. ($+$ 4′, $-$ 14′, $+$5′). 17^h to 20^h Wave in H.F. ($-$ ·0051), with irregular return. 17$\frac{1}{2}^h$ to 20$\frac{3}{4}^h$ Wave in V.F. ($+$ ·0009). 22$\frac{1}{4}^h$ to 23$\frac{1}{2}^h$ Wave in H.F. ($+$ ·0019). 6^d 22$\frac{1}{2}^h$ to 7^d 1^h Triple wave in Dec. ($+$ 4′, $-$ 3′, $+$ 3′).

8^d 18$\frac{1}{2}^h$ to 19$\frac{1}{4}^h$ Wave in Dec. ($-$ 3′).

11^d 0^h to 12^d 0^h See Plate III.

12^d 0^h to 0$\frac{3}{4}^h$ Decrease in H.F. ($-$ ·0026).

17^d 9$\frac{1}{4}^h$ to 11$\frac{1}{4}^h$ Wave in H.F. ($-$ ·0019). 9$\frac{1}{2}^h$ to 13^h Irregular double-crested wave in Dec. ($+$ 7′). 18^h to 19^h Wave in H.F. ($-$ ·0015). 18$\frac{1}{2}^h$ to 20^h Wave in Dec. ($-$ 8′).

18^d 1$\frac{3}{4}^h$ to 2$\frac{1}{2}^h$ Wave in Dec. ($+$ 3′).

26^d 15$\frac{1}{2}^h$ to 17^h. Truncated wave in H.F. ($-$ ·0020). 16^h to 17$\frac{1}{4}^h$ Truncated wave in Dec. ($-$ 4′), followed till 18^h by a decrease ($-$ 4′). 18$\frac{1}{2}^h$ to 20^h Wave in Dec. ($-$ 5′), followed till 22^h by a double-crested wave ($-$ 5′). 18$\frac{1}{2}^h$ to 19$\frac{1}{2}^h$ Wave in H.F. ($-$ ·0011). 20$\frac{1}{2}^h$ to 21$\frac{1}{2}^h$ Wave in H.F. ($-$ ·0012).

27^d 0^h to 3^h Double wave in Dec. ($+$ 4′ to $-$ 3′): the first portion double-crested.

28^d 0$\frac{3}{4}^h$ to 2^h Wave in Dec. ($+$ 6′). 1^h to 1$\frac{1}{2}^h$ Decrease in V.F. ($-$ ·0003).

30^d 23$\frac{1}{2}^h$ to 31^d 2^h Irregular double-crested wave in Dec. ($-$ 5′): small irregular double wave in H.F.

31^d 5$\frac{1}{2}^h$ to 7$\frac{1}{2}^h$ Two successive waves in H.F. ($+$ ·0010 and $+$ ·0011). 5^h to 7$\frac{1}{2}^h$ Wave in Dec. ($+$ 5′). 15^h to 16$\frac{1}{2}^h$ Wave in Dec. ($-$ 3′): irregular wave in H.F. ($-$ ·0016).

EXPLANATION OF THE PLATES.

The magnetic motions figured on the Plates are :—

(1.) Those for selected days of disturbance—January 24^d 6^h to 25^d 6^h, February 21^d 6^h to 22^d 6^h, 22^d 6^h to 23^d 6^h, April 8^d 18^h to 9^d 18^h, 16, May 14^d 16^h to 15^d 16^h, October 10^d 8^h to 11^d 8^h, December 11.

(2.) Those for four quiet days—March 11, May 13, August 12, November 7—which are given as types of the ordinary diurnal movement at four seasons of the year.

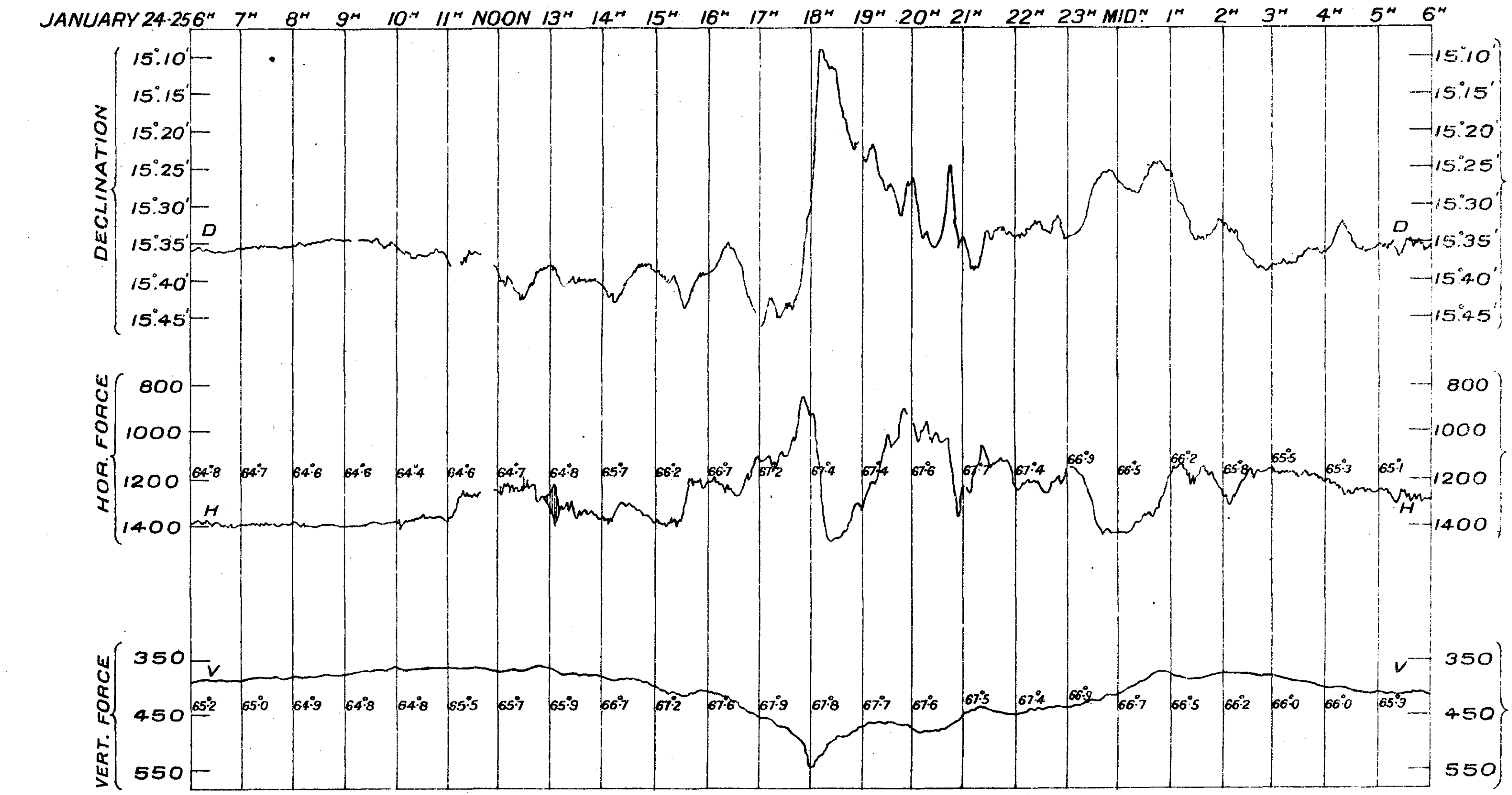
The time is Greenwich Civil Time (commencing at midnight, and counting the hours from 0 to 24).

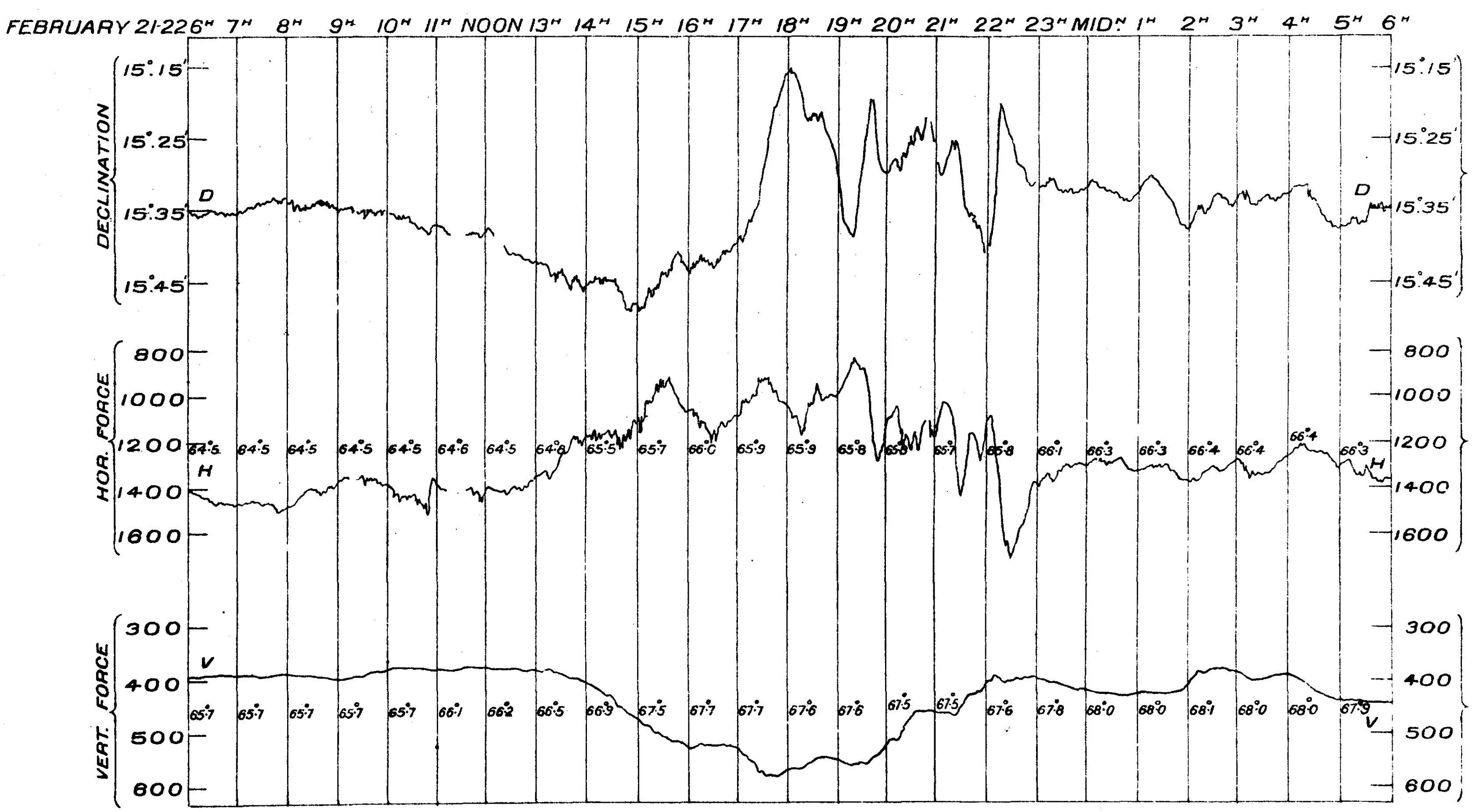
The magnetic declination, horizontal force, and vertical force are indicated by the letters D., H., and V. respectively; the declination (west) is expressed in minutes of arc, the units for horizontal and vertical force are ·00001 of the whole horizontal and vertical forces respectively, the corresponding scales being given on the sides of each diagram. Equal changes of amplitude in the several registers correspond nearly to equal changes of absolute magnetic force, 0·001 of a C.G.S. unit being represented by $0^{in.}80 = \overset{mm.}{20{\cdot}2}$ in the declination curve, by $0^{in.}74 = \overset{mm.}{18{\cdot}7}$ in the horizontal force curve, and by $0^{in.}73 = \overset{mm.}{18{\cdot}6}$ in the vertical force curve.

Downward motion indicates increase of declination and of horizontal and vertical force.

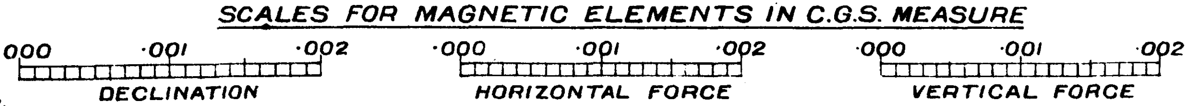
The temperatures (Fahrenheit) of the horizontal and vertical force magnets at each hour are given in small figures on the Diagrams.

MAGNETIC DISTURBANCES RECORDED AT THE ROYAL OBSERVATORY, GREENWICH, 1911.





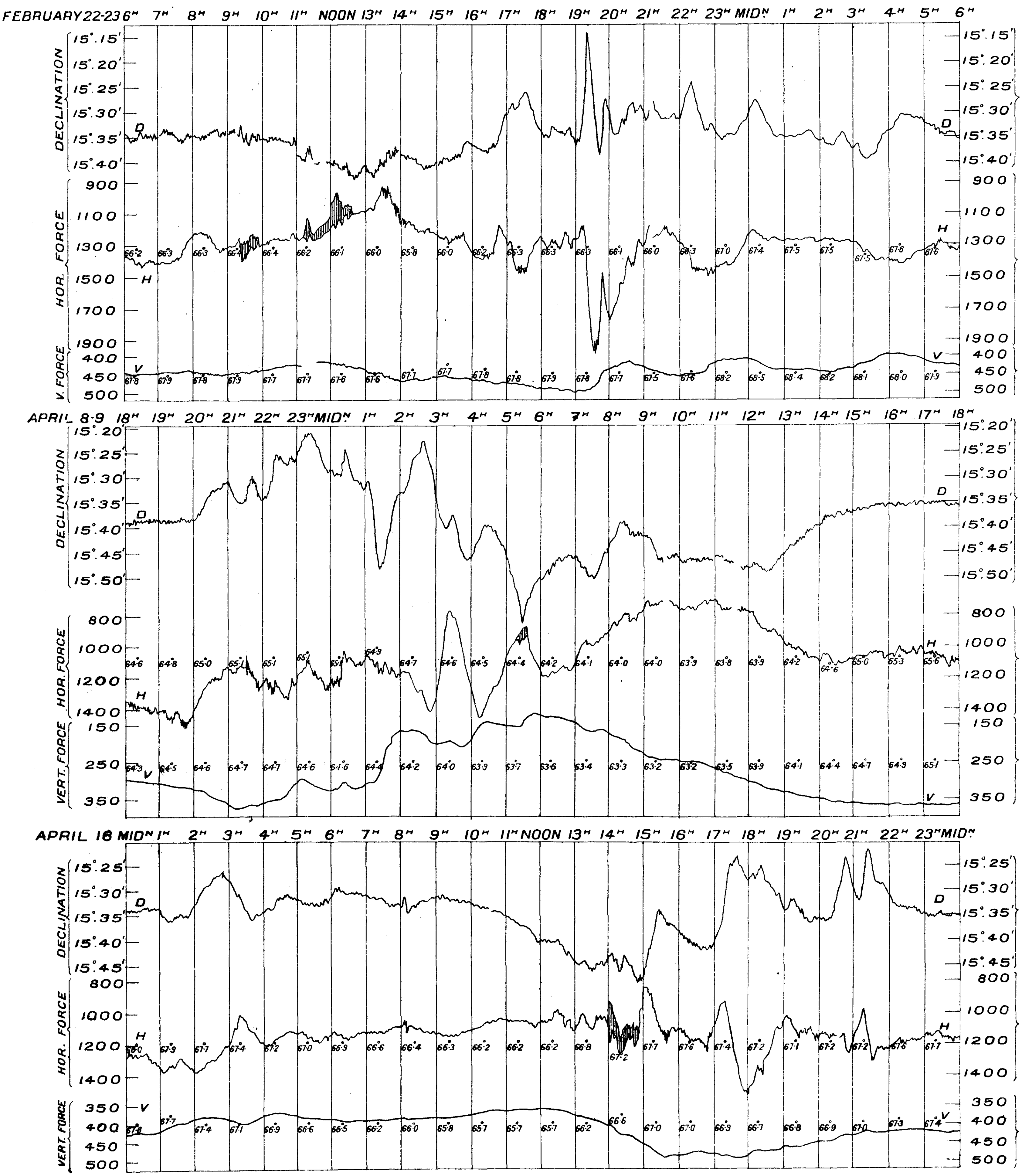
SCALES FOR MAGNETIC ELEMENTS IN C.G.S. MEASURE



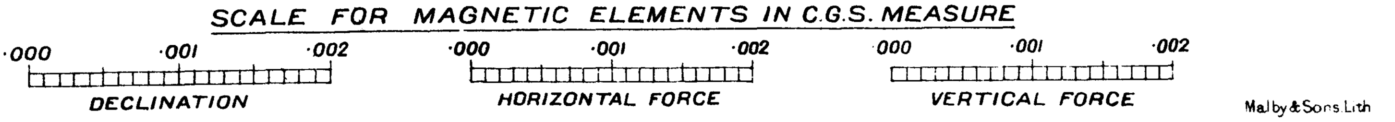
1687-13189/138. 600. 9. 12.

Malby & Sons. Lith

MAGNETIC DISTURBANCES RECORDED AT THE ROYAL OBSERVATORY GREENWICH 1911



SCALE FOR MAGNETIC ELEMENTS IN C.G.S. MEASURE



1687-13189/138. 600. 9. 12.

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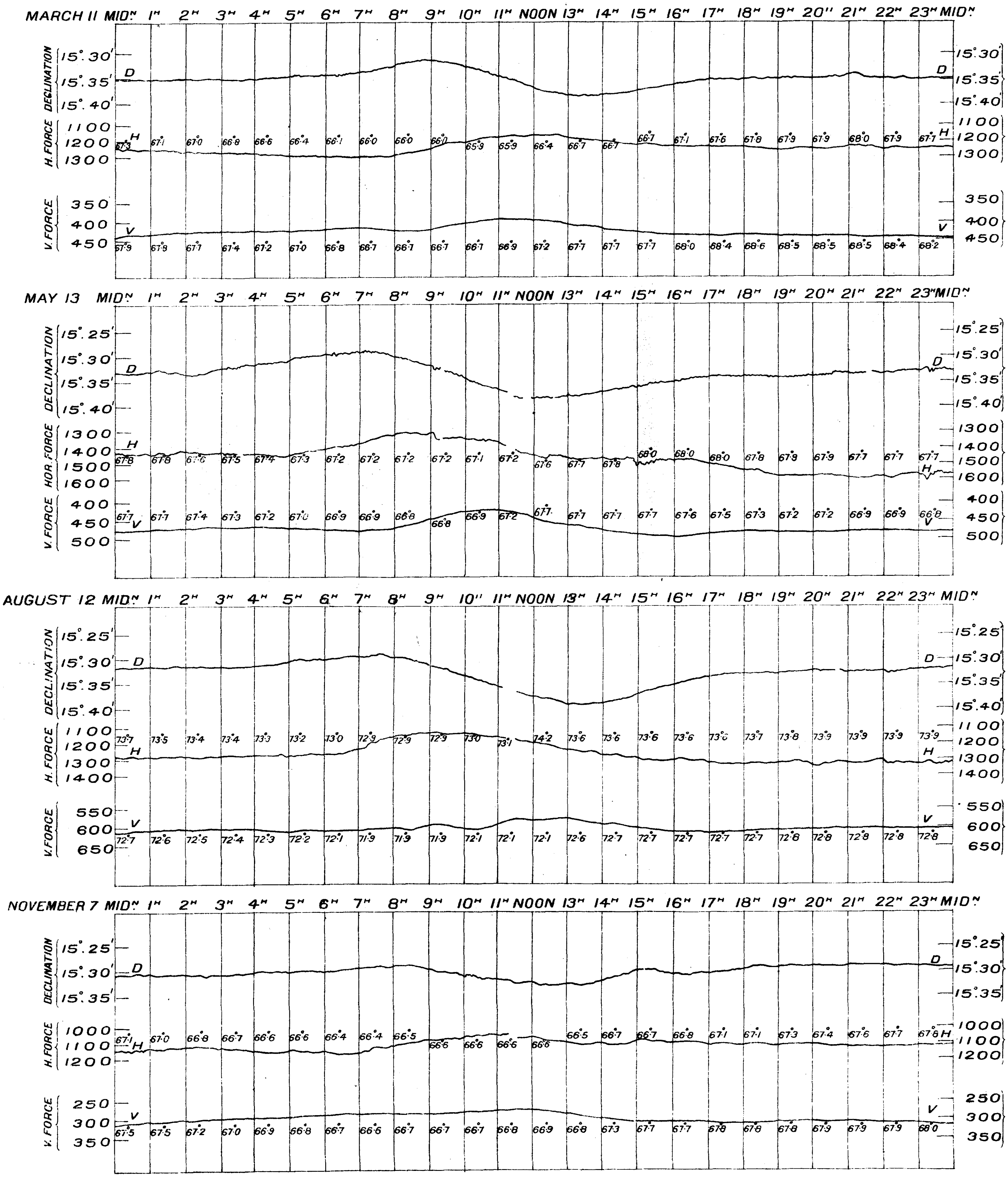
MAGNETIC DISTURBANCES RECORDED AT THE ROYAL OBSERVATORY, GREENWICH, 1911.

Plate III

1687. 13189/138. 600. 9. 12.

Malby & Sons, Lith.

TYPES OF MAGNETIC DIURNAL VARIATIONS AT FOUR SEASONS OF THE YEAR RECORDED AT THE ROYAL OBSERVATORY, GREENWICH, 1911.



SCALES FOR MAGNETIC ELEMENTS IN C.G.S. MEASURE

DECLINATION	HORIZONTAL FORCE	VERTICAL FORCE
·000 ·001 ·002	·000 ·001 ·002	·000 ·001 ·002

1687 13189/138. 600. 9. 12.

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ROYAL OBSERVATORY, GREENWICH.

RESULTS

OF

METEOROLOGICAL OBSERVATIONS.

1911.

MONTH and DAY, 1911.	Phases of the Moon.	BAROMETER. Mean of 24 Hourly Values (corrected and reduced to 32° Fahrenheit).	TEMPERATURE. Of the Air. Highest.	Lowest.	Daily Range.	Mean of 24 Hourly Values.	Excess above Average of 65 Years.	Of Evaporation. Mean of 24 Hourly Values.	Of the Dew Point. Deduced Mean Daily Value.	Difference between the Air Temperature and Dew Point Temperature. Mean.	Greatest.	Least.	Degree of Humidity (Saturation = 100).	TEMPERATURE. Of Radiation. Highest in Sun's Rays.	Lowest on the Grass.	Of the Earth 3 ft. 2 in. below the Surface of the Soil.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	°	in.	
Jan. 1	...	29·995	45·6	34·3	11·3	39·9	+ 1·3	37·8	35·1	4·8	9·9	1·5	83	47·1	28·8	44·28	0·042	wP : wP, mN : mP
2	...	29·757	37·8	32·6	5·2	35·3	− 3·1	32·9	29·2	6·1	10·1	3·0	77	43·3	27·0	44·10	0·043	mP : sP, sN : mP, mN
3	...	29·853	40·2	32·2	8·0	36·1	− 2·2	34·3	31·6	4·5	6·7	0·3	84	62·2	31·5	43·82	0·143	vP, vN : mP
4	...	29·971	40·5	36·4	4·1	38·1	− 0·2	36·5	34·3	3·8	5·0	2·2	86	46·0	34·0	43·56	0·010	wP : mP, mN : mP
5	...	29·909	39·0	35·3	3·7	37·0	− 1·2	36·3	35·3	1·7	2·8	0·5	94	39·9	34·5	43·36	0·027	wP : mP, wwN : mP
6	...	29·703	42·0	36·0	6·0	38·7	+ 0·6	37·7	36·4	2·3	6·9	0·5	92	46·0	32·3	43·30	0·166	wP : wP, vN : vN, mP
7	In Equator	30·012	38·6	31·9	6·7	34·6	− 3·4	33·4	31·4	3·2	4·6	1·4	88	39·9	24·1	43·17	0·000	mP : sP : sP
8	First Quarter	30·153	49·1	38·0	11·1	46·0	+ 8·1	45·6	45·2	0·8	4·1	0·0	97	51·0	34·0	43·09	0·044	wP : wwP
9	...	30·136	50·0	38·8	11·2	46·7	+ 8·8	45·7	44·6	2·1	6·0	0·4	93	52·2	32·5	43·00	0·290	wwP : wwP : wwN, wP
10	...	30·325	42·5	34·9	7·6	38·2	+ 0·3	36·5	34·2	4·0	7·5	3·3	86	45·0	28·0	43·40	0·000	mP
11	...	29·685	44·7	36·2	8·5	41·8	+ 3·9	40·3	38·4	3·4	5·8	1·1	89	46·0	32·1	43·50	0·185	wP : wwN, wP : wP, vN
12	...	29·459	44·7	33·1	11·6	37·4	− 0·5	35·5	32·9	4·5	9·9	0·9	84	52·5	30·9	43·40	0·217	wP, vN : mP : mP, mN
13	Perigee : Greatest Declination N.	29·995	37·0	30·5	6·5	33·8	− 4·2	32·4	29·9	3·9	6·6	1·8	85	47·0	26·0	43·20	0·000	mP : mP : sP
14	Full	30·157	30·5	25·6	4·9	27·7	− 10·3	26·9	23·6	4·1	6·7	2·0	84	29·2	19·1	43·00	0·000	sP
15	...	30·251	38·0	24·1	13·9	30·7	− 7·4	29·8	27·4	3·3	4·5	1·4	86	39·5	19·0	42·50	0·008*	sP
16	...	30·431	44·0	27·1	16·9	36·0	− 2·3	34·7	32·8	3·2	4·6	2·7	88	42·2	21·8	42·05	0·000	sP : sP : mP
17	...	30·570	43·0	39·1	3·9	41·4	+ 2·9	39·7	37·6	3·8	5·1	1·8	87	49·0	34·7	41·71	0·000	mP
18	...	30·555	42·5	40·3	2·2	41·4	+ 2·8	39·7	37·6	3·8	5·7	1·8	87	43·0	38·0	41·70	0·000	wP : mP : mP
19	...	30·458	40·3	36·1	4·2	37·7	− 1·0	36·7	35·4	2·3	3·9	1·8	92	39·2	35·6	41·87	0·000	mP
20	In Equator	30·353	39·6	33·1	6·5	36·0	− 2·8	35·7	35·3	0·7	2·1	0·5	97	45·3	34·0	42·00	0·000	mP
21	...	30·124	38·0	35·3	2·7	36·7	− 2·1	36·2	35·5	1·2	1·7	0·0	95	38·2	35·1	42·00	0·008	mP
22	Last Quarter	30·152	38·2	35·8	2·4	36·9	− 1·9	35·7	34·1	2·8	5·5	1·4	90	38·1	35·0	42·00	0·000	wP : mP
23	...	30·233	39·0	32·4	6·6	35·8	− 3·1	35·3	34·5	1·3	2·6	0·3	95	39·9	28·0	42·00	0·042	wP : mP : sP
24	Apogee	30·212	46·1	29·5	16·6	39·6	+ 0·7	38·3	36·6	3·0	6·8	0·0	90	68·3	24·3	42·00	0·003*	... : wP : wP
25	...	30·103	48·5	43·1	5·4	46·1	+ 7·0	43·8	41·1	5·0	7·1	1·9	84	60·5	39·8	41·93	0·000	wP
26	...	30·202	51·7	46·6	5·1	48·4	+ 9·1	46·4	44·2	4·2	7·6	2·5	86	71·5	40·5	42·10	0·000	wwP : wP : wP
27	Greatest Declination S.	30·273	47·2	42·5	4·7	44·3	+ 4·8	41·7	38·6	5·7	7·9	3·4	80	49·0	39·2	42·50	0·000	wP : mP : sP
28	...	30·295	47·4	33·0	14·4	39·5	− 0·1	38·0	36·0	3·5	6·2	1·4	88	50·2	24·6	42·77	0·000	mP
29	...	30·237	41·3	28·1	13·2	35·4	− 4·3	35·0	34·4	1·0	3·9	0·0	96	57·0	21·8	42·92	0·005*	mP : vP : wP
30	New	30·202	41·0	31·7	9·3	36·9	− 2·8	34·7	31·6	5·3	8·2	1·8	82	74·2	25·8	42·70	0·000	wP : mP : mP
31	...	30·457	35·0	26·7	8·3	30·8	− 8·9	28·3	21·4	9·4	14·1	3·4	67	69·4	21·2	42·51	0·000	mP : mP : sP
Means	...	30·136	42·0	34·2	7·8	38·2	− 0·4	36·8	34·7	3·5	6·1	1·5	87·5	49·1	30·1	42·76	Sum 1·233	...
Number of Column for Reference.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

The results apply to the civil day.

The mean reading of the Barometer (Column 2) and the mean temperatures of the Air and Evaporation (Columns 6 and 8) are deduced from the photographic records. The average temperature (Column 7) is deduced from the 65 years' observations, 1841–1905. The temperature of the Dew Point (Column 9) and the Degree of Humidity (Column 13) are deduced from the corresponding temperatures of the Air and Evaporation by means of Glaisher's Hygrometrical Tables. The mean difference between the Air and Dew Point Temperatures (Column 10) is the difference between the numbers in Columns 6 and 9, and the Greatest and Least Differences (Columns 11 and 12) are deduced from the 24 hourly photographic measures of the Dry-bulb and Wet-bulb Thermometers. The readings in Column 16 are taken daily at noon.

The values given in Columns 3, 4, 5, 14, and 15 are derived from eye-readings of self-registering thermometers.

* Rainfall (Column 17). Amounts entered on January 15, 24, and 29 are derived from fog and frost.

The mean reading of the *Barometer* for the month was 30in·136, being 0in·342 *higher* than the average for the 65 years, 1841–1905.

TEMPERATURE OF THE AIR.

The highest in the month was 51°·7 on January 26; the lowest in the month was 24°·1 on January 15; and the range was 27°·6.
The mean of all the highest daily readings in the month was 42°·0, being 1°·1 *lower* than the average for the 65 years, 1841–1905.
The mean of all the lowest daily readings in the month was 34°·2, being 0°·5 *higher* than the average for the 65 years, 1841–1905.
The mean of the daily ranges was 7°·8, being 1°·6 *less* than the average for the 65 years, 1841–1905.
The mean for the month was 38°·2, being 0°·4 *lower* than the average for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Daily Duration of Sunshine.	Sun above Horizon.	Wind as deduced from Self-Registering Anemometers. Osler's. General Direction. A.M.	P.M.	Pressure on the Square Foot. Greatest.	Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	P.M.
	hours.	hours.			lbs.	lbs.	miles.		
Jan. 1	0·0	7·8	W	NNE	3·7	0·41	405	p.-cl : 10, s, th.-r	p.-cl,slt.-sh,so.-ha : 1 : p.-cl, ho.-fr
2	0·1	7·9	N	NNE	6·0	0·78	459	p.-cl,ho.-fr: p.-cl, w : 10, slt.-sn, w	8, sc, n, slt.-sn, w : 10, fq.-r : 10
3	2·4	7·9	N : E : ESE	E : ENE : NE	4·5	0·36	377	10, sn : 10 : p.-cl, sn	5, sc, cu.-s : 9 : 10
4	0·0	7·9	NE	ENE	5·9	0·48	426	10 : 10, w	10 : 10, oc.-slt.-r
5	0·0	7·9	NE : NNE	NE : ENE : Calm	1·3	0·04	187	10, th.-r : 10, slt.-r : 10, s, n, th.-r	10, oc.-th.-r : 10, th.-r : 10, slt.-r
6	0·0	8·0	SW : SSW	SW : N : NW	4·6	0·28	326	10 : 10 : 10, s, n, slt.-r	10,sc,n,slt.-r: 10, r : p.-cl, h
7	0·6	8·0	W : WNW	WNW : SW	1·5	0·02	268	0, ho.-fr : 0,h,ho.-fr: 5, th.-cl	8, th.-cl : 4, th.-cl : p.-cl, ho.-fr,slt.-r
8	0·0	8·0	SW : WSW	WSW : W : WNW	2·5	0·19	348	10, th.-r : 10, li.-shs : 10, slt.-m	10, s : 10, m.-r
9	0·0	8·0	W : WNW	W : NE : N	4·3	0·17	310	10, m.-r : 10, slt.-r	10, slt.-r : p.-cl : 0, d
10	2·0	8·1	N : NNW : NW	NNW : W : SW	2·2	0·12	281	0, ho.-fr : 0, ho.-fr : 1, th.-cl	3, ci,ci.-s,ci.-cu : 10, ci.-s,th.-cl,lu.-ha : 10, th.-cl, lu.-ha,ho.-fr
11	0·0	8·1	SW : WSW	W : WSW	7·9	0·78	498	10 : 10 : 10, sc, n, r, w	10, sc, n, w : 10, th.-r, w : 10, fq.-r
12	0·1	8·2	NE : ENE	NE	20·5	1·65	609	10, r, w : 10, g : 9, sc, s, so.-ha, st.-w	9, sn,so.-ha,prh,w : 9, sn, w : p.-cl, ho.-fr
13	1·2	8·2	NE	NE : NNE	6·5	0·38	330	p.-cl,ho.-fr: p.-cl,ho.-fr: 10	8, cu, n : p.-cl,cu.-s,lu.-ha: th.-cl, ho.-fr
14	0·0	8·2	NNE : Calm	WSW : SW : Calm	0·0	0·00	121	p.-cl,ho.-fr: h, ho.-fr : 0, f, glm	f : slt.-m, slt.-f, ho.-fr
15	1·8	8·2	WSW : Calm	WSW : W : SW	0·0	0·00	163	p.-cl,ho.-fr: m : th.-cl, f	th.-cl, f : 3, slt.-f : 0,slt.-f,ho.-fr
16	0·0	8·3	WSW : W	Variable : Calm	0·0	0·00	133	p.-cl,ho.-fr: 10 : 10, f	10, f : 10, slt.-f
17	0·0	8·3	WSW : W	W	1·5	0·03	215	10 : 10, slt.-f : 10, n, s	10, n, s : 10
18	0·0	8·4	W : NW : NNW	NNW : N : WNW	0·9	0·03	194	10 : 10	10 : 10
19	0·0	8·4	W : WSW : SW	WSW : SW : Calm	0·1	0·00	138	10 : 10, s	10, s : 10
20	0·0	8·5	Calm	Calm	0·1	0·00	78	10 : 10 : 10, m.-r, slt.-f	10, slt.-f : 10, oc.-m.-r
21	0·0	8·5	Calm : SW : WSW	WSW : NNW	0·1	0·00	144	10, m.-r : 10, slt.-r : 10, m.-r	10 : 10
22	0·0	8·5	N : Calm	Calm : SSE	0·0	0·00	82	10 : 10	10 : 10, oc.-m.-r
23	0·0	8·6	Calm : SSE	SW	0·0	0·00	127	10, m.-r : 10, slt.-r : 10, oc.-m.-r	10 : 9 : 9, ho.-fr
24	4·2	8·7	SW	WSW : SW	2·5	0·10	275	p.-cl,m,ho.-fr : p.-cl,ho.-fr,f : p.-cl, f	5, ci.-s, cu : p.-cl : 10
25	0·0	8·7	WSW : SW	WSW	5·5	0·48	525	9 : 10 : 10, sc, s	10, s, n : 10 : p.-cl
26	2·4	8·8	WSW	W : WSW	3·2	0·25	457	p.-cl : p.-cl	9, cu.-s, n : 9 : 10
27	0·0	8·8	WSW : W	W : WSW : SW	2·1	0·10	329	10 : 10	10, s, n : 10
28	2·5	8·9	WSW : SW	Calm : SSW	0·0	0·00	150	p.-cl,ho.-fr: 1, ho.-fr : 5, ci.-s, slt.-f	5, slt.-f : 1, slt.-f : 0,slt.-f,ho.-fr
29	0·5	8·9	Calm	NE : E : ESE	1·4	0·02	124	0,tk.-f,ho.-fr: f : f	tk.-f : 10 : 9
30	7·1	8·9	ESE : E : ENE	E : ESE	5·1	0·47	409	9 : 10 : 7, cu.-s, sc	2, cu.-s, sc : 0 : 0, ho.-fr
31	8·0	9·0	ESE	ESE : E : ENE	3·2	0·30	315	0, ho.-fr : 0	0 : 0, ho.-fr
Means	1·1	8·3	...	...	...	0·24	284		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27

The mean *Temperature of Evaporation* for the month was 36°·8, being 0°·4 *lower* than
The mean *Temperature of the Dew Point* for the month was 34°·7, being 0°·6 *lower* than
The mean *Degree of Humidity* for the month was 87·5, being 0·5 *less* than
The mean *Elastic Force of Vapour* for the month was 0in·201, being 0in·005 *less* than
The mean *Weight of Vapour in a Cubic Foot of Air* for the month was 2grs·3, being 0gr·1 *less* than
The mean *Weight of a Cubic Foot of Air* for the month was 561 grains, being 7 grains *greater* than
} the average for the 65 years, 1841–1905.

The mean amount of *Cloud* for the month (a clear sky being represented by 0, and an overcast sky by 10) was 7·9.

The mean proportion of *Sunshine* for the month (constant sunshine being represented by 1) was 0·127. The maximum daily amount of *Sunshine* was 8·0 hours on January 31.

The highest reading of the *Solar Radiation Thermometer* was 74°·2 on January 30; and the lowest reading of the *Terrestrial Radiation Thermometer* was 19°·0 on January 15.

The *Proportions of Wind* referred to the cardinal points were N. 5, E. 6, S. 4, and W. 11. Five days were calm.

The *Greatest Pressure of the Wind* in the month was 20·5 lbs. on the square foot on January 12. The mean daily *Horizontal Movement of the Air* for the month was 284 miles; the greatest daily value was 609 miles on January 12; and the least daily value was 78 miles on January 20.

Rain (0in·005 or over) fell on 12 days in the month, amounting to 1in·233, as measured by gauge No. 6 partly sunk below the ground; being 0in·648 *less* than the average fall for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Phases of the Moon.	BAROMETER. Mean of 24 Hourly Values (corrected and reduced to 32° Fahrenheit).	TEMPERATURE. Of the Air. Highest.	Of the Air. Lowest.	Of the Air. Daily Range.	Of the Air. Mean of 24 Hourly Values.	Of the Air. Excess above Average of 65 Years.	Of Evaporation. Mean of 24 Hourly Values.	Of the Dew Point. Deduced Mean Daily Value.	Difference between the Air Temperature and Dew Point Temperature. Mean.	Greatest.	Least.	Degree of Humidity (Saturation = 100).	TEMPERATURE. Of Radiation. Highest in Sun's Rays.	Of Radiation. Lowest on the Grass.	Of the Earth 3 ft. 2 in. below the Surface of the Soil.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	°	in.	
Feb. 1	...	30·574	37·0	21·6	15·4	29·4	−10·2	28·2	24·2	5·2	9·4	0·0	80	66·0	15·1	42·01	0·000	sP
2	...	30·532	34·7	22·6	12·1	30·6	− 8·9	29·5	26·4	4·2	5·9	0·0	84	32·3	14·0	41·50	0·000	mP
3	In Equator	30·383	41·2	32·2	9·0	38·0	− 1·5	36·7	34·9	3·1	3·8	2·2	89	45·5	28·0	41·05	0·002	mP : wwP : wwP
4	...	30·367	43·0	37·2	5·8	40·1	+ 0·6	38·7	36·9	3·2	4·8	0·7	89	55·0	32·0	40·80	0·018	wwP
5	...	30·346	42·1	38·0	4·1	39·6	0·0	38·1	36·1	3·5	5·1	1·8	88	48·8	35·0	40·86	0·014	wwP
6	First Quarter	30·439	38·6	34·9	3·7	36·7	− 2·9	34·7	31·8	4·9	8·2	1·7	83	46·0	32·8	41·02	0·000	vP : sP
7	...	30·477	37·8	32·8	5·0	34·8	− 4·7	33·2	30·6	4·2	7·0	3·8	84	36·0	28·4	41·11	0·000	sP
8	...	30·469	40·1	34·1	6·0	37·6	− 1·7	35·3	32·1	5·5	7·1	2·9	81	54·1	31·9	41·11	0·000	mP : sP : sP
9	Perigee	30·257	38·8	33·3	5·5	35·8	− 3·3	33·4	29·7	6·1	10·1	2·2	78	46·3	30·5	41·06	0·000	mP
10	Greatest Declination N.	29·861	43·5	25·1	18·4	35·9	− 3·0	33·4	29·5	6·4	9·7	0·5	78	73·1	18·5	41·09	0·085	wP : mP : sP, sN
11	...	29·914	44·9	33·2	11·7	39·0	+ 0·2	36·7	33·7	5·3	11·0	0·2	82	64·4	26·3	40·90	0·015	mP, wN : sP : sP
12	...	30·141	44·5	29·1	15·4	36·9	− 1·9	34·3	30·6	6·3	10·6	0·0	78	60·5	22·2	40·88	0·001*	mP : mP : sP
13	Full	30·306	42·0	30·1	11·9	35·9	− 3·1	34·0	31·1	4·8	10·3	3·0	83	47·0	23·6	40·80	0·000	mP : sP : sP
14	...	30·337	46·0	26·3	19·7	38·2	− 1·1	35·0	30·7	7·5	11·0	5·3	74	82·7	20·8	40·70	0·000	mP
15	...	30·308	48·1	32·9	15·2	41·6	+ 2·2	38·7	35·2	6·4	15·3	1·1	79	74·3	25·6	40·60	0·073	vP, vN : vP : sP
16	In Equator	30·091	50·0	35·0	15·0	46·3	+ 6·8	44·3	42·0	4·3	7·6	0·2	86	57·3	28·0	40·71	0·040	wP : wP : mP
17	...	29·923	55·0	48·7	6·3	50·9	+11·3	47·5	43·9	7·0	12·6	2·7	78	81·9	43·0	40·94	0·000	wP : mP : mP
18	...	29·625	55·2	48·8	6·4	51·8	+12·3	49·2	46·6	5·2	9·0	3·4	83	65·0	43·5	41·47	0·006	wP : wP : wP, wN
19	...	29·378	49·2	37·4	11·8	44·6	+ 5·1	41·0	36·8	7·8	12·6	2·3	73	79·0	30·0	42·07	0·190	wP, vN : mP : mP
20	...	29·797	48·0	33·1	14·9	40·2	+ 0·7	37·0	32·9	7·3	14·1	3·2	75	76·2	25·0	42·45	0·000	mP : sP : sP
21	Last Quarter : Apogee	29·793	49·7	35·1	14·6	42·6	+ 3·0	41·4	40·0	2·6	5·1	0·8	90	64·7	29·7	42·48	0·125	mP : wN, wP : wP
22	...	29·594	52·0	43·6	8·4	48·5	+ 8·8	44·7	40·6	7·9	17·0	0·8	74	87·0	38·0	42·45	0·022	wP, wN : mP : mP
23	...	29·348	52·0	43·0	9·0	47·4	+ 7·6	44·5	41·3	6·1	12·0	1·7	80	64·9	37·0	42·70	0·139	wP : wP, vN : wP
24	Greatest Declination S.	29·456	51·0	42·8	8·2	45·9	+ 5·9	41·3	36·0	9·9	17·0	5·7	69	82·5	36·4	42·90	0·005	wP : sP : mP
25	...	29·490	55·0	41·2	13·8	48·3	+ 8·2	46·1	43·7	4·6	9·5	0·7	85	66·6	37·5	43·08	0·110	vN, wP : wP : mP
26	...	29·759	48·9	37·8	11·1	44·1	+ 3·9	39·5	34·1	10·0	17·6	3·3	68	87·0	31·0	43·25	0·035	vP, vN : mP : sP
27	...	29·799	48·8	34·3	14·5	42·5	+ 2·2	41·6	40·5	2·0	4·8	0·0	93	63·2	29·1	43·35	0·347	mP : wP, wwN
28	...	29·390	52·0	45·1	6·9	49·2	+ 8·9	47·9	46·5	2·7	4·6	0·6	91	58·0	39·0	43·35	0·149	wP : wP, wwN : wP, vN
Means	...	30·006	46·0	35·3	10·7	41·2	+ 1·6	38·8	35·7	5·5	9·7	1·8	81·3	63·0	29·7	41·67	Sum 1·376	...
Number of Column for Reference.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

The results apply to the civil day.

The mean reading of the Barometer (Column 2) and the mean temperatures of the Air and Evaporation (Columns 6 and 8) are deduced from the photographic records. The average temperature (Column 7) is deduced from the 65 years' observations, 1841–1905. The temperature of the Dew Point (Column 9) and the Degree of Humidity (Column 13) are deduced from the corresponding temperatures of the Air and Evaporation by means of Glaisher's Hygrometrical Tables. The mean difference between the Air and Dew Point Temperatures (Column 10) is the difference between the numbers in Columns 6 and 9, and the Greatest and Least Differences (Columns 11 and 12) are deduced from the 24 hourly photographic measures of the Dry-bulb and Wet-bulb Thermometers. The readings in Column 16 are taken daily at noon.

The values given in Columns 3, 4, 5, 14, and 15 are derived from eye-readings of self-registering thermometers.

* Rainfall (Column 17). Amount entered on February 12 is derived from frost.

The mean reading of the *Barometer* for the month was 30in·006, being 0in·204 *higher* than the average for the 65 years, 1841–1905.

TEMPERATURE OF THE AIR.

The highest in the month was 55°·2 on February 18; the lowest in the month was 21°·6 on February 1; and the range was 33°·6.
The mean of all the highest daily readings in the month was 46°·0, being 0°·8 *higher* than the average for the 65 years, 1841–1905.
The mean of all the lowest daily readings in the month was 35°·3, being 1°·1 *higher* than the average for the 65 years, 1841–1905.
The mean of the daily ranges was 10°·7, being 0°·3 *less* than the average for the 65 years, 1841–1905.
The mean for the month was 41°·2, being 1°·6 *higher* than the average for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Daily Duration of Sunshine.	Sun above Horizon.	Wind as deduced from Self-Registering Anemometers. Osler's. General Direction. A.M.	P.M.	Pressure on the Square Foot. Greatest.	Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	P.M.
	hours.	hours.			lbs.	lbs.	miles.		
Feb. 1	5·9	9·1	Calm	ENE : E : ESE	0·3	0·00	133	0, ho.-fr : 0, h, slt.-m, ho.-fr : 2, cu	1 : 1 : th.-cl, ho.-fr
2	0·0	9·1	Calm	N	0·1	0·00	125	p.-cl, ho.-fr : p.-cl, h, slt.-f, ho.-fr : p.-cl, f	10, s, : 10
3	0·0	9·2	W : WSW : N	NNE : NE	1·1	0·04	259	10 : 10 : 10, m.-r	10, m.-r : 10, m.-r
4	0·0	9·2	NE : N : NNE	NNE : NE : N	1·0	0·05	219	10 : 10, m.-r : 9, s	10, slt.-sh : 10, li.-shs : 10, sh.-r
5	0·0	9·3	N : NNE	N : NNE	0·6	0·00	197	9, oc.-slt.-r : 9, oc.-slt.-r : 10, s, n, li.-shs	10, n, s : 10, n, s : 10, r
6	0·0	9·4	N	N	0·3	0·00	169	10 : 9, slt.-f : 10	10 : 10
7	0·0	9·4	N : Calm	Calm : N : NW	0·0	0·00	94	10 : 10, glm, slt.-f : 10, glm, slt.-f	10, slt.-f : 10, glm, slt.-f : 10, slt.-f
8	0·0	9·5	N : NNE : NE	NE : Calm	0·5	0·02	166	10, slt.-f : 10 : 10, s, n	10, s, n : 10
9	0·0	9·5	Calm : SSE	SSE : SE	0·2	0·00	103	10 : 10, s, n	10, s, n : 10, s, n : p.-cl
10	3·9	9·6	SE : SSE	SSW : SW : WSW	0·7	0·03	189	1, ho.-fr : 1, ho.-fr : 5, ci.-s, so.-ha	8, ci.-s, so.-ha : p.-cl : 10, m.-r
11	3·4	9·6	NNW : WNW : NW	NNW : NW	1·4	0·13	282	10, shs.-r : 9 : 7, cu.-s	7, cu.-s, n : p.-cl : p.-cl, h
12	1·9	9·7	WSW : WNW : NW	N : NNW	0·7	0·02	211	h, ho.-fr : 9 : 9, li.-cl, slt.-f	9, cu, cu.-s : 9, cu, cu.-s : 9
13	0·0	9·8	WSW : SSW	SSE : S : SW	0·0	0·00	154	9, ho.-fr : 10 : 10, slt.-f	10, n, s : p.-cl : 1, ho.-fr
14	6·2	9·8	SW : SSW	WSW : SW	1·2	0·09	281	1, ho.-fr : 1, ho.-fr, slt.-f : 3, th.-cl	p.-cl, ci, ci.-s : 10 : 10
15	5·1	9·9	WSW : NNW	NNW : SW : SSW	2·3	0·14	288	9, r : 10, oc.-r, m : 4, ci.-s, cu.-s	2, th.-cl : ci.-s, h, lu.-ha : th.-cl, lu.-ha, ho.-fr
16	0·0	10·0	SW	WSW : SW	6·6	0·78	541	p.-cl, r : 10 : 10, s, sc, slt.-r, w	10, s, sc, w : 10, n, s, sc, w : 9, w
17	3·6	10·0	WSW : W	W : WSW	11·4	1·09	651	p.-cl, slt.-sh, st.-w : p.-cl, th.-cl, w : 6, th.-cl, w	5, cu, th.-cl : 9, w
18	0·1	10·1	WSW : SW	WSW : SW	18·0	1·47	738	p.-cl, w : 9, w : 10, w	10, sc, w : 9, st.-w : 10, sh.-r, g
19	5·5	10·1	WSW : W	W : WNW : NW	12·7	1·29	680	p.-cl, r, st.-w : p.-cl, sh.-r, sq : 6, cu, n, g	8, st.-w : p.-cl, cu, n, w : 0
20	5·4	10·2	W : WSW : NNW	NW : W : WSW	3·5	0·28	390	1, ho.-fr : th.-cl	8 : p.-cl : 1
21	0·0	10·3	W : WSW : SW	SW	7·0	0·77	484	p.-cl : 10, r : 10, r	10, sc, th.-r, w : 10, fq.-th.-r, w : 10, r, w
22	8·7	10·3	SW : W	W : WSW : SW	20·0	2·23	810	10, r, st.-w : 9, r, st.-w : 6, cu, n, g	7, cu, g : p.-cl, st.-w : p.-cl
23	0·8	10·4	SW	SW : WSW	13·8	2·09	793	p.-cl : 10, st.-w : 10, sc, st.-w	10, fq.-r, g : p.-cl, li.-shs, g : 9, oc.-r, g
24	5·6	10·5	WSW : W	WNW : W : WSW	10·8	1·65	744	p.-cl, g : p.-cl, st.-w : 8, cu, st.-w	7, cu, st.-w : p.-cl, ci.-s, cu, w : 10, sh.-r
25	0·4	10·5	SW : S : WSW	W : WNW	7·2	0·53	490	10, r : 10, r : 10, n, s	9, w : p.-cl, w : 0, h, d
26	7·6	10·6	WSW : WNW : NW	NW : W	14·7	1·35	651	p.-cl, sh.-r, st.-w : 9, st.-w : 7, st.-w	6, cu, n, st.-w : 1, w : p.-cl, h
27	0·0	10·7	WSW : SW : S	SSW : SW	3·2	0·28	336	9 : 10 : 10, r	10, r : 10, r
28	0·0	10·7	SW	SW : WSW	6·5	0·86	562	10, r : 10, r, w : 10, sc, n, fq.-th.-r, w	10, sc, n, slt.-r, w : p.-cl, li.-shs : p.-cl, sh.-r
Means	2·3	9·9	...	...	...	0·54	384		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27

The mean *Temperature of Evaporation* for the month was 38°·8, being 1°·1 *higher* than
The mean *Temperature of the Dew Point* for the month was 35°·7, being 0°·3 *higher* than
The mean *Degree of Humidity* for the month was 81·3, being 4·2 *less* than
The mean *Elastic Force of Vapour* for the month was 0^{in}·209, being 0^{in}·002 *greater* than
The mean *Weight of Vapour in a Cubic Foot of Air* for the month was 2^{grs}·4, being the *same* as
The mean *Weight of a Cubic Foot of Air* for the month was 555 grains, being 2 grains *greater* than
} the average for the 65 years, 1841–1905.

The mean amount of *Cloud* for the month (a clear sky being represented by 0, and an overcast sky by 10) was 7·8.

The mean proportion of *Sunshine* for the month (constant sunshine being represented by 1) was 0·232. The maximum daily amount of *Sunshine* was 8·7 hours on February 22.

The highest reading of the *Solar Radiation Thermometer* was 87°·0 on February 22 and 26; and the lowest reading of the *Terrestrial Radiation Thermometer* was 14°·0 on February 2.

The *Proportions of Wind* referred to the cardinal points were N. 6, E. 1, S. 6, and W. 12. Three days were calm.

The *Greatest Pressure of the Wind* in the month was 20·0 lbs. on the square foot on February 22. The mean daily *Horizontal Movement of the Air* for the month was 384 miles; the greatest daily value was 810 miles on February 22; and the least daily value was 94 miles on February 7.

Rain (0^{in}·005 or over) fell on 16 days in the month, amounting to 1^{in}·376, as measured by gauge No. 6 partly sunk below the ground; being 0^{in}·104 *less* than the average fall for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Phases of the Moon.	BAROMETER. Mean of 24 Hourly Values (corrected and reduced to 32° Fahrenheit).	TEMPERATURE. Of the Air. Highest.	Lowest.	Daily Range.	Mean of 24 Hourly Values.	Excess above Average of 65 Years.	Of Evaporation. Mean of 24 Hourly Values.	Of the Dew Point. Deduced Mean Daily Value.	Difference between the Air Temperature and Dew Point Temperature. Mean.	Greatest.	Least.	Degree of Humidity (Saturation = 100).	TEMPERATURE. Of Radiation. Highest in Sun's Rays.	Lowest on the Grass.	Of the Earth 3 ft. 2 in. below the Surface of the Soil.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	°	in.	
Mar. 1	New	29·899	51·3	37·2	14·1	44·4	+ 4·0	40·4	35·7	8·7	16·0	4·6	71	93·0	31·0	43·50	0·000	wN, mP : sP : sP
2	...	30·085	59·3	44·2	15·1	50·8	+10·4	47·8	44·7	6·1	11·6	1·9	80	85·0	39·4	43·61	0·004	wP : wP : mP
3	In Equator	30·166	53·6	47·0	6·6	50·3	+ 9·8	47·8	45·2	5·1	11·0	1·7	83	64·3	42·1	43·80	0·001	wP : mP
4	...	29·925	50·4	39·0	11·4	46·4	+ 5·7	44·1	41·5	4·9	9·0	1·3	84	71·2	36·6	44·07	0·093	wP : mP : mP, vN
5	...	29·975	46·0	32·6	13·4	39·0	− 1·9	36·7	33·7	5·3	10·8	1·4	82	74·5	25·2	44·35	0·000	mP
6	Perigee	29·793	46·7	32·6	14·1	40·1	− 0·9	38·1	35·5	4·6	9·0	0·9	84	67·4	26·5	44·31	0·171	mP : mP : vN, vP
7	First Quarter	29·925	45·9	36·0	9·9	42·1	+ 1·1	40·3	38·1	4·0	8·8	0·7	86	69·7	29·4	44·03	0·082	wN, mP : sP, wN : sP
8	...	29·923	48·1	29·7	18·4	39·3	− 1·8	37·2	34·5	4·8	10·3	0·0	83	84·6	24·0	43·90	0·004	sP : mP
9	Greatest Declination N.	29·790	47·9	35·4	12·5	42·2	+ 1·2	39·6	36·4	5·8	11·1	1·5	81	81·0	28·2	43·70	0·132	wP, ssN : vN, sP : sP
10	...	29·891	51·0	29·1	21·9	41·6	+ 0·7	38·3	34·2	7·4	12·6	2·4	76	88·2	24·0	43·61	0·000	mP
11	...	29·753	44·8	35·5	9·3	42·0	+ 1·0	40·6	38·9	3·1	7·9	1·1	89	56·0	27·7	43·42	0·044	vN, mP : wN, vP : mP
12	...	29·587	47·1	30·7	16·4	39·6	− 1·5	37·7	35·2	4·4	9·5	0·7	85	72·0	23·3	43·40	0·280	mP : mP : wP, vN
13	...	29·270	43·0	33·0	10·0	36·9	− 4·4	34·8	31·8	5·1	9·7	0·6	83	71·8	30·5	43·25	0·234	wN, wP : sP, ssN : ssN, vP
14	Full	29·470	43·2	33·3	9·9	38·2	− 3·3	34·8	30·2	8·0	11·4	4·3	73	73·2	30·0	43·10	0·006	mP : sP : ssP
15	...	29·298	40·4	33·2	7·2	36·2	− 5·5	34·7	32·5	3·7	7·0	0·9	87	53·7	27·2	42·90	0·173	sP : vP, ssN : vP, vN
16	In Equator	29·401	45·3	34·6	10·7	39·6	− 2·3	37·0	33·6	6·0	11·0	1·2	79	94·2	31·6	42·70	0·030	wP : vP : mP
17	...	29·614	46·0	29·1	16·9	37·4	− 4·6	35·9	33·8	3·6	7·7	0·3	87	80·0	22·0	42·50	0·018	wP : vP, ssN : wwN, wP
18	...	29·655	45·0	37·2	7·8	40·1	− 1·9	38·9	37·4	2·7	7·7	1·6	90	83·0	33·5	42·25	0·035	wP : wP : ...
19	...	29·680	43·0	37·1	5·9	40·3	− 1·6	39·2	37·8	2·5	5·3	1·6	91	58·7	31·1	42·22	0·000	...
20	...	29·591	51·5	37·7	13·8	43·0	+ 1·1	40·8	38·2	4·8	10·9	1·4	83	99·5	31·4	42·30	0·000	... : wP : vP
21	Apogee	29·598	61·8	37·2	24·6	47·2	+ 5·3	44·4	41·3	5·9	13·3	1·5	81	107·0	30·0	42·41	0·025	mP, mN : wP : wP
22	...	29·730	60·0	37·2	22·8	48·2	+ 6·2	45·8	43·2	5·0	12·7	0·2	83	107·9	29·0	42·61	0·004	wP : wP : wP, wwN
23	Last Quarter : Greatest Dec. S.	29·849	49·5	38·6	10·9	44·4	+ 2·2	43·8	43·1	1·3	3·2	1·1	96	66·3	37·8	42·91	0·130	vP, vN : wP, mN : wP
24	...	29·832	47·3	36·2	11·1	40·7	− 1·7	38·0	34·6	6·1	12·3	1·6	79	91·0	30·2	43·30	0·000	wP : mP : mP
25	...	29·852	42·0	33·2	8·8	36·7	− 6·0	33·5	28·9	7·8	15·0	3·8	74	103·0	27·7	43·40	0·003	mP, ssN : vP, ssN : mP
26	...	29·810	44·0	33·3	10·7	37·4	− 5·6	34·1	29·5	7·9	12·1	3·2	73	84·3	28·5	43·15	0·000	wP
27	...	29·645	39·7	35·3	4·4	37·6	− 5·7	36·6	35·3	2·3	4·4	1·2	92	44·5	34·0	42·91	0·186	wP, wN : vN, mP : wP, vN
28	...	29·677	53·1	33·1	20·0	42·9	− 0·8	39·9	36·3	6·6	13·4	0·9	78	104·1	28·0	42·75	0·000	mP
29	...	29·674	51·0	40·3	10·7	44·0	− 0·1	43·2	42·2	1·8	4·8	0·5	94	66·8	36·0	42·63	0·000	mP : mP : ...
30	In Equator : New	29·517	47·2	39·6	7·6	43·3	− 1·2	42·8	42·2	1·1	2·9	0·2	96	55·3	39·7	42·80	0·000	...
31	...	29·654	56·0	41·2	14·8	48·5	+ 3·6	46·2	43·7	4·8	11·6	1·5	84	79·2	30·8	43·08	0·000	... : mP
Means	...	29·727	48·4	35·8	12·6	41·9	0·0	39·8	37·1	4·9	9·8	1·5	83·5	78·4	30·5	43·19	Sum 1·655	...
Number of Column for Reference.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

The results apply to the civil day.

The mean reading of the Barometer (Column 2) and the mean temperatures of the Air and Evaporation (Columns 6 and 8) are deduced from the photographic records. The average temperature (Column 7) is deduced from the 65 years' observations, 1841–1905. The temperature of the Dew Point (Column 9) and the Degree of Humidity (Column 13) are deduced from the corresponding temperatures of the Air and Evaporation by means of Glaisher's Hygrometrical Tables. The mean difference between the Air and Dew Point Temperatures (Column 10) is the difference between the numbers in Columns 6 and 9, and the Greatest and Least Differences (Columns 11 and 12) are deduced from the 24 hourly photographic measures of the Dry-bulb and Wet-bulb Thermometers. The readings in Column 16 are taken daily at noon.

The values given in Columns 3, 4, 5, 14, and 15 are derived from eye-readings of self-registering thermometers.

The mean reading of the *Barometer* for the month was 29in·727, being 0in·019 *lower* than the average for the 65 years, 1841–1905.

TEMPERATURE OF THE AIR.

The highest in the month was 61°·8 on March 21; the lowest in the month was 29°·1 on March 10 and 17; and the range was 32°·7.
The mean of all the highest daily readings in the month was 48°·4, being 1°·4 *lower* than the average for the 65 years, 1841–1905.
The mean of all the lowest daily readings in the month was 35°·8, being 0°·7 *higher* than the average for the 65 years, 1841–1905.
The mean of the daily ranges was 12°·6, being 2°·1 *less* than the average for the 65 years, 1841–1905.
The mean for the month was 41°·9, being the *same* as the average for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Daily Duration of Sunshine.	Sun above Horizon.	Wind as Deduced from Self-Registering Anemometers. Osler's. General Direction. A.M.	P.M.	Pressure on the Square Foot. Greatest.	Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	P.M.
	hours.	hours.			lbs.	lbs.	miles.		
Mar. 1	8·8	10·8	NW : WNW : W	WNW : W : WSW	4·7	0·69	534	1 : 1 : 2, cu	p.-cl, cu, w : 1 : p.-cl, w
2	1·8	10·9	WSW	W : WNW : WSW	7·1	0·79	566	p.-cl, w : 10, n, w : 8, sc, w	9, sc, w : p.-cl, cu, s : 0
3	0·1	10·9	W	WNW : W	2·3	0·20	373	9 : 9 : 10	10, cu.-s, n : 10 : 10
4	0·1	11·0	WSW : SW	WSW : NNE : N	3·5	0·25	368	9 : 10 : 10	10, n : 10, n, r, w : p.-cl, r
5	4·9	11·0	N : Calm	NNE : Calm : SW	0·2	0·00	148	1, ho.-fr : 0, h : 2, th.-cl	8, cu, n : p.-cl, n, s : p.-cl,m,ho.-fr
6	0·1	11·1	SW : SSW : WSW	W : WSW : N	0·3	0·00	199	9 : 9 : 8,ci.-s,s,so.-ha	10,ci.-s,s,so.-ha,slt.-r : 10, c.-r : 10, r
7	0·4	11·2	N : NNE : NE	NE : NNE	1·7	0·15	267	10, r : 10 : 10, n	10, sh.-r : 9, cu : p.-cl
8	0·7	11·2	Calm : SW : WSW	WSW : SW	1·1	0·03	213	p.-cl, tk.-f, ho.-fr : f, so.-ha : 10, th.-cl, so.-ha	9, s : p.-cl : 9, d, r
9	2·4	11·3	SSW : SW : NNW	NNW : NW	2·6	0·24	322	10, r : 10, r : 9, r, glm	p.-cl, slt.-sh : 0, h, ho.-fr
10	5·6	11·4	WSW : SW	SW : SSW	4·5	0·34	370	0,h,ho.-fr : 0 : 5,ci,ci.-s,cu,n	9,ci.-s,so.-ha : 10, s : 10
11	0·0	11·5	SW	WSW : Calm	3·4	0·23	278	10, m.-r : 10, m.-r : 10, oc.-th.-r	10, glm : 10 : 8, h
12	0·2	11·5	WSW : SW	SW : S : SE	2·7	0·13	265	9 : 9 : 10, s	10, n, s : 10, n, s, c.-r : 10, r
13	4·3	11·6	NNE : N : NNW	NNW : N	9·0	0·98	502	10, r, w : 9,slt.-r,sn,w : p.-cl,ci.-s,n,w	p.-cl, ci.-s, cu,w : 9, r, sn, w : 9, sn
14	1·0	11·7	NNW : N	N : NNW : NW	10·0	0·89	481	9 : 10,oc.-sn,w : 9, ci, s, sc, w	10,s,n,sh.-r, w : li.-cl : p.-cl
15	0·0	11·7	WNW : NW : W	N : NNW	4·2	0·33	373	p.-cl : 9 : 10, sn, r	9,slt.-sn,fq.-r : 10, fq.-r : 10, r
16	4·1	11·8	N : NE	NE : NNE : N	2·0	0·11	220	9, r : 9, sh.-r : 6, cu, n	7, cu, n : p.-cl : 9, th.-r
17	0·3	11·9	SW : SSE : SE	ESE : E	2·0	0·09	211	p.-cl, m, ho.-fr : 9 : 9, cu	10,n,sh.-r,sl,hl : 10 : p.-cl
18	0·2	11·9	E	E : ENE	6·5	0·58	418	9 : 9 : 10, s, w	10, slt.-r, w : 10, slt.-r : 10, th.-r
19	0·0	12·0	E : ENE	E : ENE	3·1	0·35	353	10 : 10, n, s	10 : 10 : 10, th.-cl, h
20	8·7	12·0	NE : ENE : E	E : NE	5·4	0·42	371	9 : p.-cl : 1, ci, w	2, ci, w : 2, ci, w : th.-cl, d
21	4·6	12·1	NE : ENE : E	Variable : SE : ESE	1·0	0·03	167	9 : 10, m.-r : 9	5, cu, n : p.-cl : p.-cl, d
22	6·3	12·2	E : ESE	ESE : E : NE	1·5	0·06	195	p.-cl, m : 10, slt.-m : 4, cu	5, ci, cu : p.-cl, l, sh.-r : p.-cl, d, l
23	0·0	12·3	NE : ENE	E : ENE	1·9	0·17	286	10, oc.-r : 10, slt.-r : 10, slt.-sh	10, fq.-r : 10, m.-r
24	1·9	12·3	NE : ENE : E	ENE : NE : N	4·3	0·40	380	10 : 10 : 9, s, n	9, n : p.-cl : 2, slt.-sh
25	7·4	12·4	NNE : NE	NE : NNE	14·0	1·47	606	p.-cl, ho.-fr : p.-cl, ho.-fr : 6, cu.-s,oc.-sn,st.-w	6, ci, cu, n, oc.-sn, st.-w : p.-cl,oc.-sn,w : p.-cl, w
26	2·2	12·4	NNE : NE	NE	16·0	2·23	806	9, w : 10, w : 10, s, sc, g	p.-cl, cu,n,g : 10, g : 10,m.-r, st.-w
27	0·0	12·5	NE : NNE	NE : E : ESE	7·0	0·92	556	10, m.-r, w : 10, r : 10, n, sc, fq.-r, w	10, oc.-slt.-r, w : 10, fq.-r
28	9·3	12·6	ESE : E	ESE : E : ENE	2·1	0·23	292	10 : p.-cl, h : 3,ci,ci.-s,ci.-cu	5, ci, ci.-cu : p.-cl, ci,ci.-s,cu : 10
29	0·0	12·6	ENE : NE	NE : NNE	1·3	0·11	295	10, f : 10, slt.-f : 10	10, s : 10 : 10, m.-r
30	0·0	12·7	NNE : N	N : Calm : WSW	0·5	0·03	174	10, m, tk.-f : 10, f : 10, n, s, slt.-f	10, n, s : 10, slt.-f : 10, slt.-f, m.-r
31	0·6	12·8	SW : WSW	WSW : NE	0·4	0·00	198	10,oc.-m.-r : 10,oc.-m.-r : 10	10 : p.-cl, m : th.-cl,d,tk.-f
Means	2·5	11·8	...	...	...	0·40	348		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27

The mean *Temperature of Evaporation* for the month was 39°·8, being 0°·4 *higher* than
The mean *Temperature of the Dew Point* for the month was 37°·1, being 0°·8 *higher* than
The mean *Degree of Humidity* for the month was 83·5, being 3·0 *greater* than
The mean *Elastic Force of Vapour* for the month was 0in·221, being 0in·007 *greater* than
The mean *Weight of Vapour in a Cubic Foot of Air* for the month was 2grs·6, being 0gr·1 *greater* than
The mean *Weight of a Cubic Foot of Air* for the month was 549 grains, being the *same* as
} the average for the 65 years, 1841–1905.

The mean amount of *Cloud* for the month (a clear sky being represented by 0, and an overcast sky by 10) was 7·9.

The mean proportion of *Sunshine* for the month (constant sunshine being represented by 1) was 0·208. The maximum daily amount of *Sunshine* was 9·3 hours on March 28.

The highest reading of the *Solar Radiation Thermometer* was 107°·9 on March 22; and the lowest reading of the *Terrestrial Radiation Thermometer* was 22°·0 on March 17.

The *Proportions of Wind* referred to the cardinal points were N. 9, E. 9, S. 4, and W. 8. One day was calm.

The *Greatest Pressure of the Wind* in the month was 16·0 lbs. on the square foot on March 26. The mean daily *Horizontal Movement of the Air* for the month was 348 miles; the greatest daily value was 806 miles on March 26; and the least daily value was 148 miles on March 5.

Rain (0in·005 or over) fell on 15 days in the month, amounting to 1in·655, as measured by gauge No. 6 partly sunk below the ground; being 0in·135 *greater* than the average fall for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Phases of the Moon.	BAROMETER. Mean of 24 Hourly Values (corrected and reduced to 32° Fahrenheit).	TEMPERATURE. Of the Air. Highest.	Lowest.	Daily Range.	Mean of 24 Hourly Values.	Excess above Average of 65 Years.	Of Evaporation. Mean of 24 Hourly Values.	Of the Dew Point. Deduced Mean Daily Value.	Difference between the Air Temperature and Dew Point Temperature. Mean.	Greatest.	Least.	Degree of Humidity (Saturation = 100).	TEMPERATURE. Of Radiation. Highest in Sun's Rays.	Lowest on the Grass.	Of the Earth 3 ft. 2 in. below the Surface of the Soil.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	°	in.	
Apr. 1	...	29·790	53·2	41·5	11·7	46·4	+ 1·1	44·6	42·6	3·8	8·0	0·4	87	92·1	31·5	43·40	0·122	wP : wP : mP, vN
2	Perigee	29·785	43·0	39·3	3·7	41·7	− 4·0	40·5	39·0	2·7	4·0	1·1	91	49·7	38·0	43·70	0·790	vP, vN : sP, ssN : mP
3	...	29·917	46·3	34·3	12·0	40·1	− 5·9	35·8	30·2	9·9	18·0	3·7	67	103·1	28·2	43·90	0·000	mP : mP : sP
4	...	29·999	44·8	32·1	12·7	36·1	−10·1	34·1	31·1	5·0	10·8	2·4	82	96·5	27·1	43·82	0·007	mP : sP : sP, ssN
5	Greatest Declination N.	29·948	36·1	27·0	9·1	30·8	−15·5	30·1	28·1	2·7	13·2	0·0	89	98·0	23·6	43·53	0·083	mP, vN : vP, ssN : sP, ssN
6	First Quarter	30·022	38·0	26·7	11·3	32·1	−14·2	29·2	22·6	9·5	14·8	4·9	67	88·8	23·0	43·15	0·002	mP : sP : sP
7	...	30·004	43·0	30·6	12·4	35·2	−11·1	32·9	29·3	5·9	12·7	0·7	78	96·3	24·5	42·52	0·033	mP : vP, ssN : vP
8	...	30·075	50·6	32·2	18·4	41·5	− 4·6	38·8	35·5	6·0	12·0	0·5	80	83·0	23·9	42·22	0·000	sP : mP
9	...	30·117	48·2	35·7	12·5	42·4	− 3·6	40·2	37·5	4·9	7·6	1·7	84	67·5	29·2	42·10	0·018	mP : mP, ssN : mP, mN
10	...	29·875	45·2	38·1	7·1	41·4	− 4·5	38·3	34·4	7·0	10·1	4·0	77	98·5	33·8	42·29	0·017	mP, wN : mP
11	...	30·031	50·5	34·7	15·8	43·6	− 2·2	40·3	36·4	7·2	11·8	3·9	76	98·0	25·3	42·41	0·000	mP
12	In Equator	30·076	57·7	30·3	27·4	45·8	− 0·1	40·9	35·4	10·4	19·0	1·1	67	93·2	21·5	42·60	0·000	mP : sP : vP
13	Full	30·196	55·3	35·0	20·3	44·9	− 1·2	40·9	36·3	8·6	17·0	3·8	72	115·8	29·5	42·73	0·000	mP
14	...	30·135	63·0	31·2	31·8	48·9	+ 2·5	44·4	39·5	9·4	18·2	2·0	70	107·5	24·9	43·08	0·000	mP
15	...	29·958	66·9	39·5	27·4	52·4	+ 5·6	46·2	39·9	12·5	26·6	1·8	63	122·0	29·5	43·41	0·000	mP
16	...	29·786	58·3	39·9	18·4	48·7	+ 1·5	44·1	39·1	9·6	16·5	2·3	69	98·2	30·5	43·80	0·000	wP : mP : vP
17	...	29·675	65·0	37·4	27·6	50·1	+ 2·5	45·1	39·8	10·3	21·1	3·7	68	117·6	29·0	44·30	0·000	mP : wP : mP
18	Apogee	29·483	65·0	40·3	24·7	53·7	+ 5·7	48·6	43·6	10·1	18·6	2·0	68	120·0	32·0	44·70	0·000	wP
19	Greatest Declination S.	29·418	59·0	44·2	14·8	50·7	+ 2·4	44·9	38·9	11·8	17·3	6·3	64	119·9	37·5	45·19	0·000	wP : wP, wN : wP
20	...	29·885	59·0	42·6	16·4	49·6	+ 1·1	43·5	37·0	12·6	20·9	3·3	62	122·6	36·0	45·61	0·000	wP : mP : vP
21	Last Quarter	30·230	59·5	42·1	17·4	50·0	+ 1·3	47·2	44·2	5·8	10·3	2·9	81	98·9	34·0	45·90	0·000	wP
22	...	30·177	67·3	47·0	20·3	54·6	+ 5·9	47·6	40·8	13·8	26·5	3·8	60	123·5	32·5	46·21	0·000	wP : mP : sP
23	...	29·923	63·0	48·2	14·8	54·6	+ 6·0	50·5	46·6	8·0	14·4	2·4	74	105·5	42·0	46·51	0·000	wP
24	...	29·863	66·0	44·6	21·4	53·3	+ 4·7	47·2	41·1	12·2	23·2	2·4	64	117·6	37·5	47·00	0·000	mP
25	...	29·721	60·9	44·4	16·5	51·3	+ 2·7	47·4	43·4	7·9	16·2	3·6	75	113·0	39·0	47·40	0·000	wP : mP : mP
26	In Equator	29·617	59·5	45·0	14·5	51·0	+ 2·4	46·1	41·0	10·0	24·1	1·5	69	115·2	39·5	47·70	0·050	wP : mN, mP : mP
27	...	29·366	60·0	42·0	18·0	50·0	+ 1·3	47·2	44·2	5·8	11·8	0·9	81	98·6	39·3	47·90	0·270	vP, vN : mP, vN : ssN, mP
28	New	29·351	62·0	46·9	15·1	52·1	+ 3·3	47·4	42·6	9·5	21·7	1·7	71	117·0	41·8	47·99	0·173	wP : mP : mP, ssN
29	...	29·205	55·1	42·0	13·1	46·3	− 2·7	43·6	40·5	5·8	13·8	1·5	81	114·1	36·6	48·02	0·113	mP : vP, ssN : vP, vN
30	Perigee	29·453	58·0	42·0	16·0	49·0	− 0·1	45·6	42·0	7·0	16·3	0·4	77	111·0	34·0	48·03	0·056	mP, mN : mP : mP, ssN
Means	...	29·836	55·3	38·6	16·8	46·3	− 1·0	42·4	38·1	8·2	15·9	2·4	73·8	103·4	31·8	44·70	Sum 1·734	...
Number of Column for Reference.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

The results apply to the civil day.

The mean reading of the Barometer (Column 2) and the mean temperatures of the Air and Evaporation (Columns 6 and 8) are deduced from the photographic records. The average temperature (Column 7) is deduced from the 65 years' observations, 1841–1905. The temperature of the Dew Point (Column 9) and the Degree of Humidity (Column 13) are deduced from the corresponding temperatures of the Air and Evaporation by means of Glaisher's Hygrometrical Tables. The mean difference between the Air and Dew Point Temperatures (Column 10) is the difference between the numbers in Columns 6 and 9, and the Greatest and Least Differences (Columns 11 and 12) are deduced from the 24 hourly photographic measures of the Dry-bulb and Wet-bulb Thermometers. The readings in Column 16 are taken daily at noon.

The values given in Columns 3, 4, 5, 14, and 15 are derived from eye-readings of self-registering thermometers.

The mean reading of the *Barometer* for the month was 29in·836, being 0in·088 *higher* than the average for the 65 years, 1841–1905.

TEMPERATURE OF THE AIR.

The highest in the month was 67°·3 on April 22; the lowest in the month was 26°·7 on April 6; and the range was 40°·6.
The mean of all the highest daily readings in the month was 55°·3, being 1°·9 *lower* than the average for the 65 years, 1841–1905.
The mean of all the lowest daily readings in the month was 38°·6, being 0°·4 *lower* than the average for the 65 years, 1841–1905.
The mean of the daily ranges was 16°·8, being 1°·4 *less* than the average for the 65 years, 1841–1905.
The mean for the month was 46°·3, being 1°·0 *lower* than the average for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Daily Duration of Sunshine.	Sun above Horizon.	Wind as deduced from Self-registering Anemometers. Osler's. General Direction. A.M.	Osler's. General Direction. P.M.	Osler's. Pressure on the Square Foot. Greatest.	Osler's. Pressure on the Square Foot. Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	Clouds and Weather. P.M.
	hours.	hours.			lbs.	lbs.	miles.		
Apr. 1	0·5	12·8	NE	NE : NNE	0·3	0·00	174	9, f : 9 : 10	p.-cl : 10 : 10, r
2	0·0	12·9	NNE : N	N : NE	0·5	0·00	143	10, c.-r : 10, c.-r	10, c.-r : 10
3	5·9	13·0	N : NNE	NE : NNE	7·3	0·68	420	10 : 9,oc.-slt.-r: 9, slt.-sn	5, cu, w : p.-cl,oc.-sn,w: 0
4	6·0	13·0	N : NNE	NNE : N	4·5	0·60	399	p.-cl, slt.-sn : p.-cl : 9, n, sn	9, n, sn : p.-cl, oc.-sn: 9
5	6·8	13·1	NNE : NE : ENE	ENE : NE	15·9	1·26	588	10, s, n : p.-cl, w : 9,oc.-sn, st.-w	v, sn, w : p.-cl, st.-w : 9, slt.-sn, l, w
6	3·1	13·2	NE : ENE	ENE : NE	12·5	1·07	599	9 : 9,slt.-sn,w: 9, sn, st.-w	9, cu, n, slt.-sn, w : 9, oc.-sn, w: 10
7	5·9	13·2	NE : ENE	E : NE : NNE	4·3	0·37	345	p.-cl : 10 : 9, sn	7, cu, n : ci, ci.-s, li.-cl: th.-cl
8	2·0	13·3	N : NNE	NE	4·7	0·41	371	9 : 9 : 10, s, n	9, s, n : p.-cl : p.-cl
9	0·0	13·3	NE : NNE : N	N : NNE	6·0	0·30	320	9 : 10 : 10, th.-r	10, n, w : 10, oc.-th.-r : 10
10	1·1	13·4	N : NNE	NNE : NE	10·4	1·19	556	9, sq : 9, oc.-shs : 8, cu, n, slt.-r, hl, w	9,cu,n,st.-w: 10, n, st.-w : 9, w
11	3·6	13·5	NE : ENE	NE : E : ENE	4·2	0·46	395	9 : p.-cl : 9, cu, n	9 : p.-cl : 0, d
12	4·9	13·5	NE : Calm : Variable	NNW : ENE : NE	2·0	0·03	144	0, m : 1, ci, h, m : 5, s, glm	7, s, so.-ha : p.-cl, cu : 9
13	7·7	13·6	NNE : NE	NE : ESE : SE	1·7	0·14	233	9 : 9 : 7, cu, n	3 : p.-cl : p.-cl
14	10·0	13·7	Calm : SW : WSW	WNW : SSW : WSW	1·5	0·04	218	1 : 1 : 0	1 : 1 : 0, h
15	10·3	13·8	SW	WSW : SW : W	3·7	0·32	353	h, m : li.-cl : 3,ci,ci.-s,so.-ha	3, ci, ci.-s : 2, ci.-s : 0
16	3·0	13·8	SW : WSW	W : WSW : SW	2·6	0·23	335	1 : p.-cl : 8, cu, s	9, cu.-s : p.-cl, so.-ha : 0, d
17	8·0	13·9	WSW : Calm : SW	SW	1·9	0·09	221	th.-cl : th.-cl, h : 3, ci.-s, cu,so.-ha	7, ci, ci.-s, ci.-cu, so.-ha : 9, ci.-s : p.-cl
18	3·5	13·9	SW : SSW : S	S : SSW : SW	8·8	0·63	397	p.-cl : 9 : 8, ci, ci.-s, ci.-cu, so.-ha	8,ci.-s,s,n,so.-ha: 10, s, n, slt.-sh: p.-cl, w
19	11·9	14·0	SW	SW	12·0	1·50	609	9 : p.-cl, slt.-sh, st.-w : p.-cl, cu, st.-w	p.-cl, cu, n, st.-w : p.-cl, w : 0
20	6·6	14·0	SW : WSW : W	W : WSW : SW	3·7	0·45	412	p.-cl : p.-cl : 6, cu, n	6, cu : 5, ci.-s, cu : p.-cl
21	0·2	14·1	SW	WSW : W	7·0	0·74	475	9 : 10, w : 10, w	10, n : 10 : p.-cl
22	6·8	14·2	W : WSW	SW : WSW	4·1	0·45	409	p.-cl : li.-cl : 6,ci,ci.-s,ci.-cu	6, ci, ci.-cu : 8, ci.-s : 9
23	1·9	14·2	SW : WSW	WSW : W : WNW	6·1	0·54	445	9 : p.-cl : 10, n	10, n, w : 9, n : p.-cl, w
24	10·2	14·3	WSW : W	W : WSW	2·8	0·25	357	p.-cl : p.-cl : 2, cu, h	1, th.-cl : 0, h : th.-cl
25	2·6	14·3	WSW	WSW : SW	4·7	0·46	411	p.-cl : 9 : 9, s, so.-ha	10, s, so.-ha : 9, s : 9
26	7·7	14·4	SW : WNW	WNW : WSW	7·8	0·81	515	10, th.-r : 10 : p.-cl, r, w	7, cu, w : 4, ci, cu, s, w : p.-cl, s
27	2·3	14·5	SW : SSW	WSW : W	11·5	0·97	541	10, r : 10,oc.-slt.-r: 10, shs.-r	9, st.-w : p.-cl, shs.-r, st.-w : p.-cl, w
28	4·7	14·5	WSW : W	WSW : SW : SSW	8·5	1·12	587	p.-cl, w : 10, w : 9, cu, w	p.-cl,cu, n, w: p.-cl,sh.-r,w: p.-cl, r, sq
29	6·3	14·6	WSW : SW	SW	8·5	0·63	449	p.-cl : 9 : 9, oc.-shs, sq	v, shs.-r, w : 8, oc.-shs, w: 8
30	7·2	14·7	SW : Calm : N	N : Calm	5·3	0·10	170	9, r : p.-cl : p.-cl, cu, n, so.-ha	8, cu, n : 9, r, sq : 10
Means	5·0	13·8	...	...	...	0·53	386		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27

The mean *Temperature of Evaporation* for the month was 42°·4, being 1°·5 *lower* than the average for the 65 years, 1841–1905.
The mean *Temperature of the Dew Point* for the month was 38°·1, being 2°·0 *lower* than the average for the 65 years, 1841–1905.
The mean *Degree of Humidity* for the month was 73·8, being 2·0 *less* than the average for the 65 years, 1841–1905.
The mean *Elastic Force of Vapour* for the month was 0in·230, being 0in·018 *less* than the average for the 65 years, 1841–1905.
The mean *Weight of Vapour in a Cubic Foot of Air* for the month was 2grs·7, being 0gr·2 *less* than the average for the 65 years, 1841–1905.
The mean *Weight of a Cubic Foot of Air* for the month was 546 grains, being 3 grains *greater* than the average for the 65 years, 1841–1905.

The mean amount of *Cloud* for the month (a clear sky being represented by 0, and an overcast sky by 10) was 7·1.

The mean proportion of *Sunshine* for the month (constant sunshine being represented by 1) was 0·365. The maximum daily amount of *Sunshine* was 11·9 hours on April 19.

The highest reading of the *Solar Radiation Thermometer* was 123°·5 on April 22; and the lowest reading of the *Terrestrial Radiation Thermometer* was 21°·5 on April 12.

The *Proportions of Wind* referred to the cardinal points were N. 10, E. 4, S. 5, and W. 10. One day was calm.

The *Greatest Pressure of the Wind* in the month was 15·9 lbs. on the square foot on April 5. The mean daily *Horizontal Movement of the Air* for the month was 386 miles; the greatest daily value was 609 miles on April 19; and the least daily value was 143 miles on April 2.

Rain (0in·005 or over) fell on 12 days in the month, amounting to 1in·734, as measured by gauge No. 6 partly sunk below the ground; being 0in·168 *greater* than the average fall for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Phases of the Moon.	BAROMETER. Mean of 24 Hourly Values (corrected and reduced to 32° Fahrenheit).	TEMPERATURE. Of the Air. Highest.	Lowest.	Daily Range.	Mean of 24 Hourly Values.	Excess above Average of 65 Years.	Of Evaporation. Mean of 24 Hourly Values.	Of the Dew Point. Deduced Mean Daily Value.	Difference between the Air Temperature and Dew Point Temperature. Mean.	Greatest.	Least.	Degree of Humidity (Saturation = 100).	TEMPERATURE. Of Radiation. Highest in Sun's Rays.	Lowest on the Grass.	Of the Earth 3 ft. 2 in. below the Surface of the Soil.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	°	in.	
May 1	...	29·811	64·2	40·7	23·5	51·4	+ 2·1	46·7	41·8	9·6	18·6	0·9	69	124·5	31·6	48·10	0·000	mP
2	Greatest Declination N.	29·736	56·0	44·4	11·6	50·6	+ 1·1	48·6	46·5	4·1	9·0	0·0	87	86·3	40·7	48·20	0·148	wP : vN : mP
3	...	29·662	56·5	40·1	16·4	48·2	− 1·6	45·5	42·5	5·7	12·8	0·0	81	118·0	34·2	48·40	0·142	mP : wP : vP, vN
4	...	29·706	60·9	41·6	19·3	50·0	0·0	45·3	40·3	9·7	20·3	0·7	70	115·0	32·6	48·50	0·000	mP
5	First Quarter	29·903	61·5	40·0	21·5	50·4	+ 0·1	46·2	41·8	8·6	13·3	2·1	73	111·5	29·1	48·60	0·000	mP : mP : sP
6	...	30·086	62·2	39·8	22·4	51·7	+ 1·2	46·1	40·4	11·3	19·6	3·5	65	126·9	29·3	48·71	0·000	mP : wP
7	...	30·060	67·5	36·7	30·8	53·3	+ 2·6	46·2	39·2	14·1	20·9	5·5	59	125·1	28·0	48·90	0·000	wP
8	...	29·983	65·2	43·1	22·1	54·4	+ 3·4	47·3	40·4	14·0	23·0	4·0	59	131·5	34·8	49·10	0·000	wP : mP : mP
9	In Equator	29·836	70·0	42·1	27·9	56·7	+ 5·5	52·2	48·0	8·7	15·8	3·3	73	133·0	32·0	49·50	0·000	mP : wP
10	...	29·699	75·6	47·1	28·5	58·7	+ 7·2	54·4	50·5	8·2	19·2	0·6	74	126·9	44·0	49·79	0·000	mP : wP : mP
11	...	29·633	75·5	48·4	27·1	57·4	+ 5·6	53·9	50·7	6·7	17·3	1·3	78	131·0	43·0	50·40	0·000	mP : vP, ssN : mP
12	...	29·586	68·6	47·6	21·0	55·5	+ 3·4	53·3	51·2	4·3	11·0	0·8	86	114·8	39·5	50·81	0·000	mP : mP : wP
13	Full	29·485	75·5	49·1	26·4	60·5	+ 8·1	56·4	52·9	7·6	17·7	0·0	76	126·3	38·1	51·23	0·180	vP, vN : wP : mP
14	...	29·440	65·0	51·5	13·5	56·6	+ 4·0	54·9	53·4	3·2	4·4	0·4	89	95·2	44·7	51·55	0·354	wP, wwN : vN : wN, wP
15	Apogee	29·530	65·5	50·0	15·5	56·3	+ 3·5	53·7	51·3	5·0	10·8	1·2	83	95·0	42·6	51·98	0·000	wP
16	...	29·672	72·2	47·2	25·0	59·3	+ 6·3	55·5	52·1	7·2	17·8	0·2	78	126·2	40·0	52·28	0·000	wP
17	Greatest Declination S.	29·743	70·4	47·3	23·1	58·3	+ 5·2	54·4	50·9	7·4	18·2	0·2	76	130·2	36·0	52·51	0·000	wP
18	...	29·862	64·0	48·1	15·9	54·0	+ 0·7	51·8	49·6	4·4	11·0	0·0	85	120·1	44·6	52·76	0·000	wP
19	...	29·975	56·2	47·0	9·2	50·5	− 3·0	47·1	43·5	7·0	10·6	3·8	78	97·5	41·8	53·12	0·001	wP : mP : mP
20	...	30·000	52·3	45·3	7·0	48·3	− 5·5	45·5	42·4	5·9	8·2	1·0	81	80·9	44·6	53·11	0·010	mP
21	Last Quarter	29·997	53·0	37·4	15·6	45·9	− 8·3	43·3	40·3	5·6	8·0	0·4	82	76·8	26·5	52·88	0·002	wP : mP : wP
22	...	29·856	69·8	35·0	34·8	52·7	− 1·9	49·5	46·3	6·4	15·8	0·0	80	125·0	25·0	52·79	0·000	mP : wP
23	...	29·821	71·0	47·2	23·8	57·0	+ 2·1	52·8	48·9	8·1	21·1	1·0	74	127·5	38·1	52·60	0·000	wP : mP : mP
24	In Equator	29·885	71·9	53·6	18·3	61·9	+ 6·6	57·9	54·5	7·4	12·4	2·3	77	128·0	44·0	52·79	0·000	wP
25	...	29·827	78·0	49·3	28·7	62·9	+ 7·4	56·9	51·8	11·1	24·5	0·0	68	143·7	38·0	53·26	0·000	wP
26	...	29·734	75·6	53·9	21·7	61·5	+ 5·7	57·9	54·8	6·7	17·8	1·6	79	135·8	43·1	53·81	0·000	wP : wP, vN : wP
27	...	29·871	75·7	53·1	22·6	62·6	+ 6·6	56·6	51·5	11·1	26·0	1·7	68	131·9	39·3	54·30	0·039	vP, vN : wP : wP
28	New : Perigee	30·017	75·5	49·9	25·6	63·0	+ 6·8	57·3	52·5	10·5	22·3	3·8	68	142·5	34·7	54·70	0·000	wP
29	...	29·947	79·5	52·9	26·6	64·9	+ 8·5	58·6	53·4	11·5	24·7	2·8	66	144·0	45·0	55·09	0·000	wP
30	Greatest Declination N.	29·836	75·1	50·9	24·2	61·6	+ 4·9	56·8	52·7	8·9	20·1	3·4	73	142·8	44·0	55·54	0·005	wP
31	...	29·764	81·7	54·3	27·4	64·4	+ 7·3	60·2	56·7	7·7	16·2	0·9	76	141·7	48·9	56·01	0·995	wP : wP : vP, ssN
Means	...	29·805	68·1	46·3	21·8	56·1	+ 3·1	52·0	48·2	8·0	16·4	1·5	75·2	121·1	38·0	51·66	Sum 1·876	...
Number of Column for Reference.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

The results apply to the civil day.

The mean reading of the Barometer (Column 2) and the mean temperatures of the Air and Evaporation (Columns 6 and 8) are deduced from the photographic records. The average temperature (Column 7) is deduced from the 65 years' observations, 1841–1905. The temperature of the Dew Point (Column 9) and the Degree of Humidity (Column 13) are deduced from the corresponding temperatures of the Air and Evaporation by means of Glaisher's Hygrometrical Tables. The mean difference between the Air and Dew Point Temperatures (Column 10) is the difference between the numbers in Columns 6 and 9, and the Greatest and Least Differences (Columns 11 and 12) are deduced from the 24 hourly photographic measures of the Dry-bulb and Wet-bulb Thermometers. The readings in Column 16 are taken daily at noon.

The values given in Columns 3, 4, 5, 14, and 15 are derived from eye-readings of self-registering thermometers.

The mean reading of the *Barometer* for the month was 29in·805, being 0in·011 *higher* than the average for the 65 years, 1841–1905.

TEMPERATURE OF THE AIR.

The highest in the month was 81°·7 on May 31; the lowest in the month was 35°·0 on May 22; and the range was 46°·7.
The mean of all the highest daily readings in the month was 68°·1, being 4°·2 *higher* than the average for the 65 years, 1841–1905.
The mean of all the lowest daily readings in the month was 46°·3, being 2°·6 *higher* than the average for the 65 years, 1841–1905.
The mean of the daily ranges was 21°·8, being 1°·6 *greater* than the average for the 65 years, 1841–1905.
The mean for the month was 56°·1, being 3°·1 *higher* than the average for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Daily Duration of Sunshine.	Sun above Horizon.	Wind as Deduced from Self-Registering Anemometers. Osler's. General Direction. A.M.	General Direction. P.M.	Pressure on the Square Foot. Greatest.	Pressure on the Square Foot. Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	Clouds and Weather. P.M.
	hours.	hours.			lbs.	lbs.	miles.		
May 1	10·3	14·7	WSW	WSW : W : SW	2·4	0·18	260	9 : p.-cl : 5, cu	7, cu : 3, cu : p.-cl
2	0·0	14·8	SW : SSW	SW : W	7·6	0·62	425	10 : 10 : 10, n, s, w	10, w : 10, r, w : p.-cl, r
3	6·1	14·8	WSW : SW	SW : W	15·0	1·04	509	1 : p.-cl, cu.-s, so.-ha : 9, so.-ha, w	9, n, st.-w : 10, n, sc, r, st.-w : 9, oc.-r, w
4	11·2	14·9	W : WSW : WNW	WNW : NNW : W	1·7	0·11	265	p.-cl : p.-cl : 6, cu	7, cu : 8, cu : p.-cl
5	6·7	15·0	WSW : WNW : NW	WNW : N : NNE	1·2	0·04	213	1 : p.-cl : 7, cu, cu.-s	10 : 9, cu.-s : 9
6	9·9	15·0	N : NE : ENE	ESE : SE : SSE	1·4	0·05	163	p.-cl : p.-cl : 5, cu	6, li.-cl : li.-cl, cu.-s : 1, d
7	9·7	15·1	Calm : Variable	SSE : SE	0·9	0·03	120	1 : 1 : 0	3, cu, cu.-s : 8, cu.-s : 9
8	12·6	15·1	Calm : NE	E : ENE	2·0	0·10	160	9 : p.-cl : 3, ci	2, ci, ci.-s : 1, ci, ci.-s : 0
9	13·4	15·2	NE : NNE	NE : ENE : E	2·3	0·23	278	0 : 1 : 5, cu	4, cu : 3 : p.-cl
10	8·8	15·2	N : NNE	NE : E : ESE	1·9	0·14	250	p.-cl : 10 : p.-cl	p.-cl, cu : 1, ci.-s, cu : 1
11	4·8	15·3	NNE : N	Variable : N : NE	1·8	0·03	165	9 : 9, m : 2, cu, t	p.-cl, cu, n, l, t : p.-cl, ci.-s, ci.-cu : th.-cl, h
12	4·4	15·3	NE : NNE : N	N : Calm : Variable	0·6	0·00	131	h, m : 10 : 10, s, n	p.-cl : 1, th.-cl : th.-cl, h, d
13	9·0	15·4	Calm	WSW : SW	0·3	0·00	105	p.-cl, m : 10, r, hy.-sh, l, t : 9	7, cu : p.-cl, l, t : 9
14	0·0	15·4	SW : Calm	WSW : SW	1·1	0·02	168	9 : 10, c.-r	10, c.-r : p.-cl
15	0·9	15·5	WSW : SW	W : WSW : SW	0·3	0·00	158	10 : 9 : 10, n	10, cu, n : 9 : 9
16	8·6	15·5	Calm : E	NE : SE : ESE	0·8	0·01	112	9, m : p.-cl : 5, cu, h	6, cu, n : p.-cl : 9
17	7·8	15·6	ESE : NE : ENE	ESE : SE	1·1	0·04	155	p.-cl : p.-cl : 4, ci, cu	8, cu, s : 8, ci.-s : p.-cl, d
18	4·3	15·6	SE : ESE : ENE	ENE : NNE : NE	1·0	0·05	165	10 : 10 : 9, s	10, li.-cl : 9 : 9
19	3·3	15·7	NNE : N	N : NNE	3·2	0·26	287	9 : p.-cl : 10, n	10, s, n, li.-shs : 9, cu.-s, n : 10
20	0·0	15·7	N : NNE	N : NNE	4·3	0·40	345	10, oc.-r : 10, s, n	10, s, n : 10
21	0·0	15·8	NNE : N	N : NNE : Calm	1·7	0·03	161	9 : 10	10 : th.-cl : 1, h
22	13·8	15·8	SW	SW : SSW	1·0	0·05	219	0, h : 0 : 1, cu, h	1, cu, h : 0 : 0, d, slt.-m
23	8·8	15·9	WSW : W	W : WSW	3·0	0·26	327	0 : 1 : 5, ci.-s, cu	8, ci.-s : p.-cl : 8
24	3·4	15·9	WSW	W : WSW	2·2	0·23	340	9 : 10 : 9	9, cu, cu.-s : p.-cl, ci, ci.-s, cu : 1, d
25	9·5	16·0	SW : Calm	SW : Calm : SE	0·7	0·00	151	1, d : p.-cl : 8, ci.-s	9, ci.-s : p.-cl, ci, ci.-s : p.-cl
26	1·6	16·0	E : Calm : Variable	E : ESE	1·8	0·05	160	9 : p.-cl : 8, cu, n, s	9, cu, n : 8, s : 2
27	8·2	16·0	E : Calm : NE	E : ESE	2·2	0·09	182	p.-cl : 10, oc.-slt.-r : 8, th.-r	4, cu, s : 1 : 0, d
28	14·3	16·1	ENE : NE : E	E : ESE : NE	3·4	0·21	279	0 : 1 : 2, ci, ci.-s, cu	5, ci.-s : ci, ci.-s, cu : 8
29	14·7	16·1	NE : E	E : ENE : NE	4·0	0·28	307	9 : 1, m : 1, li.-cl	2, cu : 2, cu : 0
30	7·3	16·2	NE : N	NE	3·0	0·16	267	p.-cl : li.-cl : 5, cu, cu.-s, n	10, slt.-r : 9, s, n, slt.-sh : 9
31	7·1	16·2	NE : NNE	NE : E : Variable	2·0	0·03	160	p.-cl : 10 : p.-cl, s, h	3, ci.-s, cu, t : 10, cu, n, tsm, hy.-r, hl : 9
Means	7·1	15·5	...	...	...	0·15	225		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27

The mean *Temperature of Evaporation* for the month was 52°·0, being 3°·0 *higher* than
The mean *Temperature of the Dew Point* for the month was 48°·2, being 3°·2 *higher* than
The mean *Degree of Humidity* for the month was 75·2, being 1·0 *greater* than
The mean *Elastic Force of Vapour* for the month was 0in·338, being 0in·039 *greater* than
The mean *Weight of Vapour in a Cubic Foot of Air* for the month was 3grs·8, being 0gr·4 *greater* than
The mean *Weight of a Cubic Foot of Air* for the month was 535 grains, being 3 grains *less* than
} the average for the 65 years, 1841–1905.

The mean amount of *Cloud* for the month (a clear sky being represented by 0, and an overcast sky by 10) was 6·2.

The mean proportion of *Sunshine* for the month (constant sunshine being represented by 1) was 0·459. The maximum daily amount of *Sunshine* was 14·7 hours on May 29.

The highest reading of the *Solar Radiation Thermometer* was 144°·0 on May 29; and the lowest reading of the *Terrestrial Radiation Thermometer* was 25°·0 on May 22.

The *Proportions of Wind* referred to the cardinal points were N. 8, E. 8, S. 5, and W. 6. Four days were calm.

The *Greatest Pressure of the Wind* in the month was 15·0 lbs. on the square foot on May 3. The mean daily *Horizontal Movement of the Air* for the month was 225 miles; the greatest daily value was 509 miles on May 3; and the least daily value was 105 miles on May 13.

Rain (0in·005 or over) fell on 8 days in the month, amounting to 1in·876, as measured by gauge No. 6 partly sunk below the ground; being 0in·039 *less* than the average fall for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Phases of the Moon.	BAROMETER. Mean of 24 Hourly Values (corrected and reduced to 32° Fahrenheit).	TEMPERATURE. Of the Air. Highest.	Lowest.	Daily Range.	Mean of 24 Hourly Values.	Excess above Average of 65 Years.	Of Evaporation. Mean of 24 Hourly Values.	Of the Dew Point. Deduced Mean Daily Value.	Difference between the Air Temperature and Dew Point Temperature. Mean.	Greatest.	Least.	Degree of Humidity (Saturation = 100).	TEMPERATURE. Of Radiation. Highest in Sun's Rays.	Lowest on the Grass.	Of the Earth 3 ft. 2 in. below the Surface of the Soil.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	°	in.	
June 1	...	29.915	76.5	53.1	23.4	65.5	+ 8.1	58.9	53.5	12.0	22.1	2.2	65	136.8	43.0	56.54	0.000	wP
2	...	29.917	76.0	47.8	28.2	63.2	+ 5.4	56.6	51.0	12.2	25.6	3.6	65	137.0	35.9	56.89	0.000	wP
3	First Quarter	29.782	81.1	56.1	25.0	66.3	+ 8.2	61.4	57.5	8.8	18.2	2.6	74	144.8	42.3	57.20	0.000	wP
4	...	29.925	78.5	52.6	25.9	67.2	+ 8.9	62.2	58.2	9.0	22.3	1.2	73	124.0	40.2	57.60	0.000	wP
5	In Equator	30.095	83.9	54.4	29.5	69.5	+11.1	62.7	57.4	12.1	28.6	1.7	65	138.5	43.9	58.16	0.000	wP
6	...	30.224	81.1	54.0	27.1	66.6	+ 8.3	59.8	54.3	12.3	24.7	3.6	65	141.0	41.1	58.62	0.000	wP
7	...	30.273	69.0	50.2	18.8	57.7	− 0.5	52.8	48.4	9.3	17.4	3.6	71	142.0	40.5	58.91	0.000	wP
8	...	30.085	75.1	47.1	28.0	62.3	+ 4.2	56.7	51.9	10.4	19.9	1.4	69	145.0	36.5	59.20	0.000	mP : wP : mP
9	...	29.776	74.3	46.2	28.1	59.7	+ 1.7	55.3	51.4	8.3	16.0	0.0	74	145.0	38.9	59.32	0.000	wP : wP : mP
10	...	29.830	64.7	42.1	22.6	52.4	− 5.7	46.4	40.3	12.1	21.0	4.8	64	145.0	33.0	59.32	0.000	mP : mP : wP
11	Full : Apogee	29.833	67.2	40.6	26.6	55.5	− 2.7	49.6	44.0	11.5	21.2	2.1	66	118.0	26.5	59.20	0.000	wP
12	...	29.733	72.1	51.1	21.0	61.6	+ 3.2	53.2	45.9	15.7	19.8	9.3	56	133.0	44.9	59.05	0.002	wP : vP : vP
13	Greatest Declination S.	29.690	65.5	46.3	19.2	54.8	− 3.7	48.7	42.9	11.9	23.4	4.2	64	143.3	38.0	58.89	0.030	vP, wN : mP : mP
14	...	29.849	63.0	43.3	19.7	52.7	− 6.0	47.1	41.5	11.2	17.1	6.5	66	130.8	32.6	58.70	0.006	mP : sP : mP
15	...	30.013	67.0	42.1	24.9	54.6	− 4.2	47.9	41.4	13.2	23.9	4.1	61	138.0	27.5	58.55	0.000	mP : mP : wP
16	...	29.914	74.5	46.7	27.8	60.3	+ 1.4	52.9	46.4	13.9	24.1	4.7	60	152.5	32.6	58.40	0.006	wP : wP : vP, ssN
17	...	29.575	74.1	55.1	19.0	62.7	+ 3.7	58.0	54.0	8.7	15.2	1.2	74	131.0	46.0	58.50	0.611	vP, ssN : wP : wP
18	...	29.463	71.9	54.8	17.1	60.9	+ 1.7	56.0	51.8	9.1	15.3	1.5	71	130.9	43.9	58.68	0.004	wP, wN : wP, wN : vN, wP
19	Last Quarter	29.498	66.6	53.5	13.1	58.3	− 1.2	55.1	52.2	6.1	11.0	0.6	80	120.9	46.5	58.88	0.156	wP, wN : wP, ssN : wP, sN
20	In Equator	29.679	69.0	52.1	16.9	59.5	− 0.4	54.2	49.5	10.0	19.7	0.2	70	132.0	42.0	59.02	0.003	wP : mP : mP
21	...	29.886	70.0	52.9	17.1	59.4	− 0.9	54.3	49.7	9.7	16.6	2.0	70	126.5	42.0	59.00	0.000	wP
22	...	29.777	66.0	52.9	13.1	58.2	− 2.4	55.4	52.9	5.3	9.7	1.3	82	116.0	46.6	58.98	0.005	wP
23	...	29.576	73.6	53.6	20.0	60.0	− 0.9	56.8	54.0	6.0	16.4	0.2	81	152.0	53.1	59.13	0.373	wP, wwN : wP, wN
24	...	29.360	68.0	50.7	17.3	56.8	− 4.4	52.4	48.4	8.4	16.9	1.2	73	137.0	44.2	59.15	0.398	wP, wN : wP, wwN : wP, wN
25	...	29.524	58.8	50.6	8.2	53.2	− 8.2	51.0	48.8	4.4	7.4	1.8	85	92.3	44.1	59.00	0.148	wP : vN, wP : wP
26	Perigee : New	29.748	59.0	48.2	10.8	51.5	−10.0	48.4	45.3	6.2	15.2	1.2	79	113.0	46.9	58.84	0.170	wP : mP, ssN : vP, vN
27	Greatest Declination N.	29.990	69.5	48.3	21.2	57.2	− 4.4	51.0	45.3	11.9	18.7	1.0	64	126.1	46.9	58.56	0.000	mP
28	...	30.084	75.7	52.4	23.3	62.3	+ 0.7	57.1	52.6	9.7	17.8	1.6	71	138.8	45.3	58.41	0.000	... : wP : wP
29	...	29.972	71.0	55.3	15.7	61.3	− 0.3	56.6	52.5	8.8	15.0	2.5	74	141.0	52.5	58.50	0.021	wP
30	...	29.636	65.5	53.8	11.7	57.8	− 3.7	55.5	53.4	4.4	7.9	0.8	85	96.4	52.6	58.76	0.163	wwN, wP : wP : wP
Means	...	29.821	70.9	50.3	20.7	59.6	+ 0.2	54.5	49.9	9.8	18.3	2.4	70.6	132.3	41.7	58.60	Sum 2.096	...
Number of Column for Reference.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

The results apply to the civil day.

The mean reading of the Barometer (Column 2) and the mean temperatures of the Air and Evaporation (Columns 6 and 8) are deduced from the photographic records. The average temperature (Column 7) is deduced from the 65 years' observations, 1841–1905. The temperature of the Dew Point (Column 9) and the Degree of Humidity (Column 13) are deduced from the corresponding temperatures of the Air and Evaporation by means of Glaisher's Hygrometrical Tables. The mean difference between the Air and Dew Point Temperatures (Column 10) is the difference between the numbers in Columns 6 and 9, and the Greatest and Least Differences (Columns 11 and 12) are deduced from the 24 hourly photographic measures of the Dry-bulb and Wet-bulb Thermometers. The readings in Column 16 are taken daily at noon.

The values given in Columns 3, 4, 5, 14, and 15 are derived from eye-readings of self-registering thermometers.

The mean reading of the *Barometer* for the month was 29in·821, being 0in·006 *higher* than the average for the 65 years, 1841–1905.

TEMPERATURE OF THE AIR.

The highest in the month was 83°·9 on June 5; the lowest in the month was 40°·6 on June 11; and the range was 43°·3.
The mean of all the highest daily readings in the month was 70°·9, being 0°·2 *higher* than the average for the 65 years, 1841–1905.
The mean of all the lowest daily readings in the month was 50°·3, being 0°·4 *higher* than the average for the 65 years, 1841–1905.
The mean of the daily ranges was 20°·7, being 0°·1 *less* than the average for the 65 years, 1841–1905.
The mean for the month was 59°·6, being 0°·2 *higher* than the average for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Daily Duration of Sunshine.	Sun above Horizon.	Wind as Deduced from Self-Registering Anemometers. Osler's. General Direction. A.M.	P.M.	Pressure on the Square Foot. Greatest.	Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	P.M.
	hours.	hours.			lbs.	lbs.	miles.		
June 1	13·9	16·2	E	E : ESE : ENE	4·3	0·30	270	p.-cl : 1 : 0	0 : 0
2	14·7	16·2	ENE : NE	ENE : E	3·0	0·17	239	0 : 0	0 : 1, ci.-s : p.-cl
3	10·5	16·3	ENE : Calm	SW : SSW	0·9	0·02	145	9 : p.-cl : 5, cu	3, cu : 2, ci, ci.-s, cu : 1, d
4	8·7	16·3	WSW : Calm : N	Variable : Calm	0·1	0·00	111	p.-cl : 0 : 5, s, n	9, s, n : 5, ci.-s : h, d
5	13·9	16·3	Calm : NE	NE : ESE : Calm	1·6	0·03	136	0 : 0, m : 0	2, cu : 2, ci.-s : 0
6	14·2	16·4	Calm : NNE : ENE	NE : ESE : ENE	2·0	0·14	259	0 : 0 : 1, ci, ci.-s	2, ci, cu : 1 : p.-cl
7	11·7	16·4	ENE : E	E : ESE	3·4	0·30	302	p.-cl : 9 : 2, cu, cu.-s	0 : 1 : 1, d
8	15·4	16·4	E : Calm	E : ESE : Calm	2·5	0·16	211	1 : 0 : 0	0 : 2
9	7·3	16·4	Calm : SW : Variable	E : NE	4·0	0·30	285	p.-cl, m : li.-cl : 8, cu	9, s : 10, cu, n : p.-cl
10	10·7	16·5	NE : NNE	N : Variable	2·0	0·18	239	1 : 1 : 8, cu, n	8, cu, cu.-s : 8, ci, n : 9
11	7·1	16·5	SW : WSW : Calm	WSW : SSW : SW	1·2	0·04	169	p.-cl : 1 : 6, cu, n	8, n : 9, n : 10
12	1·6	16·5	WSW	WSW : NW	1·2	0·03	187	10 : 10 : 8, cu	7, cu, n : p.-cl : 10, n, sh.-r
13	9·0	16·5	NNE : NE	NNE : N	3·6	0·39	343	9, sh.-r : 9 : 6, cu	6, cu : 8, cu : p.-cl
14	7·3	16·5	N : NNW	N : NE	4·0	0·33	313	1 : 9 : 10, n, slt.-r	9, cu, n, oc.-slt.-r : p.-cl : 9
15	13·7	16·5	NE : NNE : N	Variable	0·8	0·04	153	p.-cl : 1, cu : 3, cu	3, ci : p.-cl : th.-cl, h
16	1·2	16·5	ESE : SE	SSE : ESE : SE	1·5	0·10	199	9 : 9	9 : 10 : 10, oc.-shs
17	7·8	16·5	SE : Variable : SW	SW : SSW	3·1	0·20	254	10, fq.-shs : 10, oc.-slt.-r, hy.-sh : 9, n	7, cu : p.-cl, m : p.-cl, l
18	8·6	16·6	S : SSW : SW	SW	9·5	0·84	464	p.-cl, slt.-sh : p.-cl, slt.-sh, w : 9, cu, n, slt.-sh, st.-w	7, cu, n, w : p.-cl, w : p.-cl, d
19	2·3	16·6	SW : SSW	SW : WSW	3·8	0·36	351	p.-cl, r : p.-cl, so.-ha : 10, n, s, sh.-r, so.-ha	10, n, s, sh.-r : 10, s, n, fq.-r : 10, r
20	8·6	16·6	WSW : W	W : SW	4·1	0·43	404	10, li.-shs : 10 : 9, cu, n	8, cu, n : p.-cl : 3
21	1·5	16·6	SW : WSW	WSW : SW	3·3	0·26	337	p.-cl : 9, cu, n : 10, cu, n	9, cu, n : 9, cu, n : th.-cl
22	0·3	16·6	SW	SW : SSW	6·5	0·73	478	p.-cl : 10 : 10, sc, n, s, slt.-r, w	10, n, slt.-sh, w : 10, w : 9, li.-shs
23	2·2	16·6	SW	SSW : SW : NW	1·5	0·13	250	10, li.-shs : 10 : 8, cu, n	9, cu, n : 10, r : 10, c.-r
24	7·8	16·6	Variable : SW	WSW : SW	11·0	0·67	430	10, c.-r : 10, fq.-r : 9, slt.-r, w	5, slt.-sh, w : p.-cl, slt.-sh, w : 2
25	1·1	16·6	SW : WSW	WSW : W	3·1	0·32	363	p.-cl : p.-cl, slt.-r : 10, n, fq.-r	10, n, s, fq.-r : 10, r : 10, slt.-r
26	2·0	16·6	W : WNW	NW : Variable : W	4·8	0·39	361	10, slt.-r : 10 : p.-cl, cu, n	9, cu, n, shs.-r, l, t : 10 : 10, slt.-r
27	6·4	16·5	WNW : NW	WNW : W	1·8	0·16	262	9 : 9 : 10, cu, n, s	p.-cl, cu : 6, ci, cu : p.-cl
28	8·7	16·5	WSW : W	W : WSW	4·0	0·43	403	9 : p.-cl : 8, cu, n	9, cu, n : 6, ci, cu : p.-cl
29	6·0	16·5	W : WSW	WSW : SW	5·0	0·50	428	10 : p.-cl : 9, ci.-cu, cu, n	9, cu, n : 9, w : 10, r
30	0·4	16·5	SW : WSW	WSW : SW	2·9	0·35	376	10, r : p.-cl : 10	10 : 10, th.-r : 9
Means	7·5	16·5	...	...	...	0·28	291		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27

The mean *Temperature of Evaporation* for the month was 54°·5, being 0°·4 *lower* than
The mean *Temperature of the Dew Point* for the month was 49°·9, being 1°·0 *lower* than
The mean *Degree of Humidity* for the month was 70·6, being 3·0 *less* than
The mean *Elastic Force of Vapour* for the month was 0in·360, being 0in·013 *less* than
The mean *Weight of Vapour in a Cubic Foot of Air* for the month was 4grs·0, being 0gr·2 *less* than
The mean *Weight of a Cubic Foot of Air* for the month was 531 grains, being the *same* as
} the average for the 65 years, 1841–1905.

The mean amount of *Cloud* for the month (a clear sky being represented by 0, and an overcast sky by 10) was 6·5.

The mean proportion of *Sunshine* for the month (constant sunshine being represented by 1) was 0·454. The maximum daily amount of *Sunshine* was 15·4 hours on June 8.

The highest reading of the *Solar Radiation Thermometer* was 152°·5 on June 16; and the lowest reading of the *Terrestrial Radiation Thermometer* was 26°·5 on June 11.

The *Proportions of Wind* referred to the cardinal points were N. 4, E. 7, S. 6, and W. 11. Two days were calm.

The *Greatest Pressure of the Wind* in the month was 11·0 lbs. on the square foot on June 24. The mean daily *Horizontal Movement of the Air* for the month was 291 miles; the greatest daily value was 478 miles on June 22; and the least daily value was 111 miles on June 4.

Rain (0in·005 or over) fell on 12 days in the month, amounting to 2in·096, as measured by gauge No. 6 partly sunk below the ground; being 0in·058 *greater* than the average fall for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Phases of the Moon.	BAROMETER. Mean of 24 Hourly Values (corrected and reduced to 32° Fahrenheit).	TEMPERATURE. Of the Air. Highest.	Of the Air. Lowest.	Of the Air. Daily Range.	Of the Air. Mean of 24 Hourly Values.	Of the Air. Excess above Average of 65 Years.	Of Evaporation. Mean of 24 Hourly Values.	Of the Dew Point. Deduced Mean Daily Value.	Difference between the Air Temperature and Dew Point Temperature. Mean.	Greatest.	Least.	Degree of Humidity (Saturation = 100).	TEMPERATURE. Of Radiation. Highest in Sun's Rays.	Of Radiation. Lowest on the Grass.	Of the Earth 3 ft. 2 in. below the Surface of the Soil.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	°	in.	
July 1	...	29·541	67·0	55·1	11·9	59·0	− 2·5	54·1	49·7	9·3	17·6	1·0	72	123·0	50·2	59·00	0·000	wP : mP
2	...	29·749	66·8	51·2	15·6	57·6	− 4·0	50·8	44·6	13·0	22·5	2·0	62	136·5	38·4	59·06	0·000	wP : wP, sN : mP
3	In Equator: First Quarter	30·129	68·2	48·4	19·8	57·2	− 4·6	50·6	44·6	12·6	22·7	3·3	63	141·7	36·0	59·13	0·000	mP : mP : wP
4	...	30·264	75·1	48·2	26·9	61·4	− 0·7	54·7	48·9	12·5	21·5	2·7	64	140·8	35·0	59·25	0·000	wP : mP : vP
5	...	30·224	81·2	56·6	24·6	67·9	+ 5·6	60·7	55·0	12·9	21·5	5·4	63	132·1	44·8	59·45	0·000	wP
6	...	30·103	86·3	52·6	33·7	70·9	+ 8·5	61·8	54·8	16·1	25·7	3·6	57	135·8	44·0	59·95	0·000	wP
7	...	30·077	87·0	56·8	30·2	71·3	+ 8·9	63·8	58·1	13·2	23·6	3·4	63	144·3	47·7	60·60	0·000	wP
8	...	30·113	88·0	55·2	32·8	71·0	+ 8·6	63·3	57·4	13·6	24·3	1·7	62	124·3	45·0	61·17	0·000	wP : mP : wP
9	Apogee	30·261	73·2	51·9	21·3	62·8	+ 0·4	57·4	52·8	10·0	17·7	2·7	70	144·3	44·0	61·50	0·000	wP
10	Greatest Declination S.	30·338	72·4	49·1	23·3	59·3	− 3·2	53·5	48·4	10·9	21·5	3·2	67	141·2	40·3	61·81	0·000	wP : mP : wP
11	Full	30·335	82·0	50·2	31·8	66·4	+ 3·7	56·2	48·0	18·4	31·2	2·8	52	145·0	39·1	62·01	0·000	wP : mP : mP
12	...	30·285	83·0	54·2	28·8	68·3	+ 5·4	59·2	52·1	16·2	29·2	1·8	56	142·3	42·1	62·09	0·000	wP : mP : mP
13	...	30·218	83·7	53·3	30·4	68·5	+ 5·4	58·5	50·6	17·9	29·6	4·5	52	147·5	43·0	62·31	0·000	mP
14	...	30·163	85·0	55·3	29·7	68·0	+ 4·7	59·2	52·3	15·7	32·0	2·5	57	149·0	45·2	62·62	0·000	mP : mP : wP
15	...	30·065	69·1	50·8	18·3	60·7	− 2·7	56·9	53·7	7·0	12·5	3·4	78	116·0	41·2	62·75	0·000	wP : wP : mP
16	...	29·885	79·4	45·8	33·6	63·7	+ 0·3	56·7	50·9	12·8	24·8	0·8	63	137·8	36·7	63·06	0·000	wP
17	In Equator	29·701	79·0	54·1	24·9	65·3	+ 1·9	58·1	52·2	13·1	21·8	4·1	62	144·0	46·8	62·90	0·000	mP
18	...	29·604	76·6	57·3	19·3	65·4	+ 2·1	57·1	50·3	15·1	26·6	4·3	58	146·9	48·7	63·00	0·000	wP : wP : mP
19	Last Quarter	29·855	78·1	53·4	24·7	64·8	+ 1·6	57·8	52·0	12·8	24·8	2·8	63	147·5	46·8	63·10	0·000	mP
20	...	30·035	83·0	56·7	26·3	70·1	+ 6·9	61·2	54·3	15·8	27·7	3·2	57	154·5	48·0	63·29	0·000	wP
21	...	30·046	93·7	61·6	32·1	77·2	+14·0	63·0	53·1	24·1	37·7	8·6	44	154·5	50·0	63·69	0·000	wP : wP : mP
22	...	30·024	95·6	58·1	37·5	78·0	+14·9	65·5	56·8	21·2	37·2	7·4	49	161·0	47·1	64·10	0·000	wP : wP : mP
23	...	30·018	81·3	60·1	21·2	68·6	+ 5·6	60·4	54·0	14·6	24·5	9·1	59	152·4	52·6	64·45	0·000	wP : wP : wwP, wwN
24	Greatest Dec. N: Perigee	29·929	79·3	58·8	20·5	66·7	+ 3·8	60·1	54·8	11·9	24·1	1·8	66	153·3	52·7	64·90	0·030	wP : wP : wP, ssN
25	New	29·735	85·1	59·1	26·0	70·4	+ 7·7	63·6	58·4	12·0	27·9	0·7	66	148·6	53·8	65·10	0·011	wP
26	...	29·705	80·9	58·0	22·9	66·6	+ 4·1	61·5	57·4	9·2	19·7	2·1	73	140·8	50·7	65·09	0·064	vP, ssN : wP : wP
27	...	29·811	87·4	54·7	32·7	71·4	+ 9·0	63·2	57·0	14·4	30·7	0·6	61	157·4	43·9	65·45	0·000	wP : wP : mP
28	...	29·825	91·9	61·7	30·2	75·8	+13·5	67·3	61·3	14·5	29·0	5·4	61	148·8	53·6	65·47	0·000	mP : wP : vP, vN
29	...	29·760	89·0	64·1	24·9	74·7	+12·4	67·5	62·3	12·4	30·2	1·3	65	156·0	55·2	65·70	0·163	wP : wP : ssP, ssN
30	In Equator	29·778	80·0	57·6	22·4	68·8	+ 6·5	62·9	58·3	10·5	23·0	2·2	68	142·6	46·8	65·91	0·000	wP
31	...	29·835	85·3	53·7	31·6	70·0	+ 7·8	62·3	56·3	13·7	27·0	3·3	62	155·0	44·3	66·12	0·000	mP, wwN : ... : ...
Means	...	29·981	81·1	55·0	26·1	67·3	+ 4·7	59·6	53·6	13·8	25·5	3·3	61·8	144·0	45·6	62·71	Sum 0·268	...
Number of Column for Reference.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16.	17	18

The results apply to the civil day.

The mean reading of the Barometer (Column 2) and the mean temperatures of the Air and Evaporation (Columns 6 and 8) are deduced from the photographic records. The average temperature (Column 7) is deduced from the 65 years' observations, 1841–1905. The temperature of the Dew Point (Column 9) and the Degree of Humidity (Column 13) are deduced from the corresponding temperatures of the Air and Evaporation by means of Glaisher's Hygrometrical Tables. The mean difference between the Air and Dew Point Temperatures (Column 10) is the difference between the numbers in Columns 6 and 9, and the Greatest and Least Differences (Columns 11 and 12) are deduced from the 24 hourly photographic measures of the Dry-bulb and Wet-bulb Thermometers. The readings in Column 16 are taken daily at noon.

The values given in Columns 3, 4, 5, 14, and 15 are derived from eye-readings of self-registering thermometers.

The mean reading of the *Barometer* for the month was 29in·981, being 0in·182 *higher* than the average for the 65 years, 1841–1905.

TEMPERATURE OF THE AIR.

The highest in the month was 95°·6 on July 22; the lowest in the month was 45°·8 on July 16; and the range was 49°·8.
The mean of all the highest daily readings in the month was 81°·1, being 6°·9 *higher* than the average for the 65 years, 1841–1905.
The mean of all the lowest daily readings in the month was 55°·0, being 1°·7 *higher* than the average for the 65 years, 1841–1905.
The mean of the daily ranges was 26°·1, being 5°·2 *greater* than the average for the 65 years, 1841–1905.
The mean for the month was 67°·3, being 4°·7 *higher* than the average for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Daily Duration of Sunshine.	Sun above Horizon.	Wind as Deduced from Self-Registering Anemometers. Osler's. General Direction. A.M.	Wind as Deduced from Self-Registering Anemometers. Osler's. General Direction. P.M.	Osler's. Pressure on the Square Foot. Greatest.	Osler's. Pressure on the Square Foot. Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	Clouds and Weather. P.M.
	hours.	hours.			lbs.	lbs.	miles.		
July 1	4·2	16·5	WSW : W : WNW	WNW : W : WSW	1·6	0·10	294	9 : p.-cl, oc.-slt.-r : 10, n, s, slt.-sh	9, n : 9, cu, cu.-s : 9
2	10·0	16·5	WSW : NW	NW : WSW	3·5	0·26	318	9 : p.-cl : 6, cu, n	5, cu, cu.-s : 6 : p.-cl
3	9·8	16·5	WSW : W : N	N : SE : SSE	2·5	0·08	195	p.-cl : p.-cl, slt.-sh : 3	4, ci, ci.-cu, cu : p.-cl : p.-cl
4	8·9	16·5	SSW : SW : WSW	W : WSW : SSW	1·1	0·05	235	2 : 1 : 4, ci.-s, cu	8, s : p.-cl : 1
5	5·0	16·4	WSW	SW : Variable	0·2	0·00	129	p.-cl : 9 : 9, li.-cl	7, cu.-s, li.-cl : 5, cu, cu.-s : 1, h
6	13·8	16·4	SW : Calm	ESE : SW	0·1	0·00	132	0, h : 0 : 0, h	0 : p.-cl
7	12·0	16·4	Calm : N	NE : ESE : SE	1·5	0·03	135	h, d : h, m : 1, cu	5, cu : 3 : 1, m
8	13·5	16·4	Calm	N : NE : E	3·2	0·04	132	0, h, m, d : 0, h	3, cu, n : 3 : 0, h
9	12·1	16·3	ENE : E	E : NE	2·4	0·15	255	p.-cl : p.-cl, ci, ci.-s	7, ci, ci.-s, cu.-s : p.-cl : 9
10	10·4	16·3	NE : NNE	NE : ENE : SE	3·2	0·25	304	p.-cl : 10 : 6, cu	2, cu : 1 : 1
11	13·0	16·3	NE	NE	3·6	0·20	288	p.-cl : p.-cl : 0	0 : 0
12	14·9	16·3	NE : N : NNE	NE	3·3	0·28	314	0, m : 0	0 : 0
13	15·2	16·2	NE : NNE	NNE : NE	3·4	0·37	333	0 : 0 : 1, ci.-s	0 : 0
14	14·4	16·2	NE	NNE : N : ESE	1·0	0·05	189	p.-cl : 1, ci, ci.-s, so.-ha	1, ci, ci.-s, ci.-cu : 1, ci.-s, ci.-cu : 0
15	3·3	16·2	WSW : (NE)	NE	3·0	0·18	268	1 : p.-cl : 9	10, s, n : 9 : 1
16	14·3	16·1	Variable : SW : WNW	NNW : N	3·3	0·35	322	p.-cl, m : p.-cl : 6, ci, ci.-s, cu	7, ci, cu : p.-cl : 9
17	5·2	16·1	NNW : WNW : WSW	WSW : W : SW	2·6	0·20	300	p.-cl, m : 10 : 10	p.-cl, ci, cu, cu.-s : p.-cl, ci, ci.-s, cu : p.-cl
18	9·9	16·0	WSW : W	W : WSW	4·1	0·45	407	p.-cl : 9 : 5, cu	3 : p.-cl : 2
19	11·6	16·0	WSW : W	W : WNW : WSW	3·6	0·24	328	p.-cl : p.-cl : 9, ci, cu, n	7, cu, cu.-s : p.-cl, ci.-cu, cu, n : th.-cl
20	6·7	16·0	WSW : SW	SW : SSW	3·7	0·22	286	p.-cl : 8 : 7, ci, ci.-s, cu	9, ci, ci.-s, so.-ha : 8, ci.-s, so.-ha : p.-cl
21	14·0	15·9	S : SSW : SW	SW	4·0	0·24	295	1, th.-cl : 1	0 : 0
22	14·6	15·9	SSW : SW : W	WSW : NNW : N	2·0	0·11	231	0 : 3	3, ci, cu : 2 : 1, li.-cl
23	11·6	15·8	NE	ENE : ESE : E	2·5	0·19	263	1 : 1 : 7, cu, cu.-s	7, cu, s : p.-cl : 10
24	8·3	15·8	ENE : ESE	ESE	2·5	0·20	227	9 : p.-cl : 1, ci, ci.-s	p.-cl, ci, ci.-s : 9 : 10, fq.-r
25	12·0	15·7	Calm : Variable : SW	SW : SSW	1·6	0·08	201	p.-cl, slt.-r : p.-cl : 5, ci.-cu, cu, n	5, cu, n : 2, ci.-s, cu : p.-cl
26	6·4	15·7	SSW : W	SW : SSW	1·6	0·05	199	9 : 10, shs.-r, t : 10, li.-shs	p.-cl, slt.-sh : p.-cl : 2
27	14·7	15·6	SSW : S	SW	2·1	0·10	215	1 : 1 : 2, ci, ci.-s, cu	2, ci, cu : 1, ci.-s : p.-cl
28	11·2	15·6	Variable : Calm	E : Variable	1·9	0·02	126	p.-cl, m : 2, cu	4, cu : p.-cl, l, t, slt.-sh : p.-cl, h
29	7·4	15·6	ESE : ENE : E	ESE : SW : Variable	8·8	0·25	240	p.-cl, m : 9, h : 4, ci.-s, cu	3, ci, ci.-s, s : 10, cu, n, l, t, shs.-r, sq : 9, l, oc.-shs
30	12·2	15·5	SSW : SW	SW : SSW	4·9	0·38	323	p.-cl : p.-cl : 4, cu, cu.-s	3, ci, ci.-s, cu : p.-cl, ci, ci.-s : 1, l
31	13·7	15·5	Calm : SSW	SSW	1·8	0·06	170	p.-cl, l, m : p.-cl, cu, n	5, cu : 2, ci.-cu, s : 1
Means	10·8	16·1	...	...	...	0·17	247		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27

The mean *Temperature of Evaporation* for the month was 59°·6, being 1°·7 *higher* than
The mean *Temperature of the Dew Point* for the month was 53°·6, being 0°·2 *lower* than
The mean *Degree of Humidity* for the month was 61·8, being 11·0 *less* than
The mean *Elastic Force of Vapour* for the month was 0in·412, being 0in·003 *less* than
The mean *Weight of Vapour in a Cubic Foot of Air* for the month was 4grs·5, being 0gr·1 *less* than
The mean *Weight of a Cubic Foot of Air* for the month was 526 grains, being 1 grain *less* than
} the average for the 65 years, 1841–1905.

The mean amount of *Cloud* for the month (a clear sky being represented by 0, and an overcast sky by 10) was 4·3.

The mean proportion of *Sunshine* for the month (constant sunshine being represented by 1) was 0·671. The maximum daily amount of *Sunshine* was 15·2 hours on July 13.

The highest reading of the *Solar Radiation Thermometer* was 161°·0 on July 22; and the lowest reading of the *Terrestrial Radiation Thermometer* was 35°·0 on July 4.

The *Proportions of Wind* referred to the cardinal points were N. 5, E. 7, S. 5, and W. 10. Four days were calm.

The *Greatest Pressure of the Wind* in the month was 8·8 lbs. on the square foot on July 29. The mean daily *Horizontal Movement of the Air* for the month was 247 miles; the greatest daily value was 407 miles on July 18; and the least daily value was 126 miles on July 28.

Rain (0in·005 or over) fell on 4 days in the month, amounting to 0in·268, as measured by gauge No. 6 partly sunk below the ground; being 2in·131 *less* than the average fall for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Phases of the Moon.	BAROMETER. Mean of 24 Hourly Values (corrected and reduced to 32° Fahrenheit).	TEMPERATURE. Of the Air. Highest.	Lowest.	Daily Range.	Mean of 24 Hourly Values.	Excess above Average of 65 Years.	Of Evaporation. Mean of 24 Hourly Values.	Of the Dew Point. Deduced Mean Daily Value.	Difference between the Air Temperature and Dew Point Temperature. Mean.	Greatest.	Least.	Degree of Humidity (Saturation = 100).	TEMPERATURE. Of Radiation. Highest in Sun's Rays.	Lowest on the Grass.	Of the Earth 3 ft. 2 in. below the Surface of the Soil.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	°	in.	
Aug. 1	First Quarter	29·835	86·2	55·5	30·7	68·4	+ 6·2	63·1	58·9	9·5	24·7	3·2	71	156·7	46·3	66·18	0·060	wP : wP : vP, ssN
2	...	29·975	83·2	56·6	26·6	67·2	+ 5·1	62·1	58·0	9·2	24·5	0·9	73	151·1	46·8	66·20	0·000	mP : wP : mP
3	...	29·905	76·3	58·0	18·3	66·6	+ 4·5	60·9	56·4	10·2	17·6	3·7	70	140·7	50·6	66·12	0·001	wP : wP : mP
4	...	29·853	80·2	55·3	24·9	66·3	+ 4·2	59·1	53·3	13·0	24·3	1·5	63	161·9	44·9	66·20	0·000	mP : wP : mP
5	Apogee	29·707	79·0	59·4	19·6	66·8	+ 4·7	61·0	56·4	10·4	19·6	3·9	70	155·0	51·5	66·02	0·000	wP : wP : mP
6	Greatest Declination S.	29·788	79·5	54·6	24·9	64·7	+ 2·5	58·4	53·2	11·5	23·2	2·5	66	150·9	47·1	66·08	0·000	wP
7	...	29·998	84·2	59·0	25·2	71·0	+ 8·8	63·1	57·1	13·9	25·6	2·6	61	156·0	50·7	66·09	0·000	wP
8	...	30·027	89·1	55·6	33·5	73·3	+11·0	64·8	58·6	14·7	31·7	1·9	60	155·9	46·0	66·17	0·000	wP
9	...	29·895	100·0	61·2	38·8	80·2	+17·9	67·7	59·2	21·0	38·3	1·1	49	161·2	50·0	66·40	0·000	wP : wP : vP
10	Full	29·920	85·5	62·1	23·4	72·0	+ 9·7	63·8	57·6	14·4	25·1	8·6	60	146·8	55·1	66·50	0·000	vP : wP
11	...	29·907	87·0	60·1	26·9	70·1	+ 7·7	64·2	59·7	10·4	26·1	4·1	69	144·0	54·3	66·80	0·000	wP
12	...	29·847	89·7	59·0	30·7	73·5	+11·0	65·4	59·4	14·1	31·2	2·8	62	140·0	49·8	67·00	0·000	wP : wwP, wwN : wP
13	In Equator	29·926	90·9	62·9	28·0	76·7	+14·2	66·2	58·8	17·9	34·4	2·9	54	150·0	52·0	67·09	0·000	wP
14	...	29·981	87·9	60·0	27·9	72·2	+ 9·7	63·7	57·3	14·9	32·5	5·2	59	150·4	48·3	67·30	0·000	wP : wwP, wwN : vP
15	...	29·971	77·7	56·1	21·6	65·3	+ 2·9	58·6	53·1	12·2	25·7	3·0	65	141·5	47·5	67·20	0·000	wP : mP : mP
16	...	29·981	76·4	53·1	23·3	63·3	+ 1·0	55·8	49·5	13·8	25·7	3·4	61	136·5	44·5	67·10	0·000	mP : mP : vP
17	Last Quarter	29·975	85·9	51·3	34·6	67·6	+ 5·5	59·8	53·6	14·0	24·4	1·8	61	143·0	40·8	67·00	0·000	wP : mP : mP
18	...	29·815	86·0	60·3	25·7	71·1	+ 9·2	60·8	53·0	18·1	28·7	10·4	52	143·2	50·9	66·91	0·000	wP : mP : mP
19	...	29·711	84·4	58·4	26·0	68·1	+ 6·4	62·6	58·3	9·8	23·0	2·2	70	147·0	50·3	66·81	0·583	... : wP, wwN : vP, ssN
20	Greatest Declination N.	29·562	82·2	57·1	25·1	69·3	+ 7·8	63·8	59·5	9·8	20·5	0·9	71	133·0	49·1	66·92	0·020	wP : wP : vP, vN
21	Perigee	29·418	73·0	62·1	10·9	65·0	+ 3·7	63·0	61·4	3·6	8·4	0·0	88	105·3	59·0	66·74	0·238	vP, vN : wwN, wP : vP, vN
22	...	29·533	67·3	57·8	9·5	62·7	+ 1·6	60·4	58·5	4·2	8·5	0·9	86	87·9	54·0	66·60	0·002	wP
23	...	29·696	71·3	54·4	16·9	61·3	+ 0·4	57·8	54·8	6·5	14·2	1·3	80	134·0	48·0	66·49	0·000	wP
24	New	29·651	76·1	54·1	22·0	63·6	+ 2·8	59·6	56·3	7·3	17·8	0·6	78	145·0	43·1	66·22	0·005	wP : wP, wN : wP
25	...	29·691	76·0	53·1	22·9	62·7	+ 2·0	58·4	54·8	7·9	18·4	0·6	75	129·8	43·0	65·92	0·025	wP : wP, ssN : wP
26	In Equator	29·833	77·2	52·7	24·5	63·6	+ 2·9	57·7	52·8	10·8	21·6	2·1	68	145·0	43·5	65·83	0·000	wP
27	...	29·821	75·9	62·0	13·9	67·3	+ 6·7	63·1	59·8	7·5	14·0	3·5	77	122·1	53·7	65·58	0·000	wwP : wwP : wP
28	...	29·760	78·8	58·1	20·7	64·1	+ 3·7	61·6	59·5	4·6	19·7	0·7	85	144·0	49·6	65·60	0·088	wwP : wP : wP, wN
29	...	29·865	75·9	55·6	20·3	64·0	+ 3·7	57·7	52·5	11·5	22·8	1·0	66	140·9	49·0	65·58	0·000	wP : wP : mP
30	...	30·014	74·7	52·7	22·0	61·4	+ 1·3	56·5	52·3	9·1	21·2	0·2	73	130·4	47·2	65·47	0·321	wP : mP : vP, ssN
31	First Quarter	30·055	76·0	48·1	27·9	61·6	+ 1·7	55·7	50·7	10·9	22·1	0·4	68	132·1	40·0	65·28	0·000	wP : wP : mP
Means	...	29·836	81·1	57·0	24·1	67·5	+ 5·8	61·2	56·3	11·2	23·1	2·5	68·1	141·3	48·6	66·37	Sum 1·343	...
Number of Column for Reference.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

The results apply to the civil day.

The mean reading of the Barometer (Column 2) and the mean temperatures of the Air and Evaporation (Columns 6 and 8) are deduced from the photographic records. The average temperature (Column 7) is deduced from the 65 years' observations, 1841–1905. The temperature of the Dew Point (Column 9) and the Degree of Humidity (Column 13) are deduced from the corresponding temperatures of the Air and Evaporation by means of Glaisher's Hygrometrical Tables. The mean difference between the Air and Dew Point Temperatures (Column 10) is the difference between the numbers in Columns 6 and 9, and the Greatest and Least Differences (Columns 11 and 12) are deduced from the 24 hourly photographic measures of the Dry-bulb and Wet-bulb Thermometers. The readings in Column 16 are taken daily at noon.

The values given in Columns 3, 4, 5, 14, and 15 are derived from eye-readings of self-registering thermometers.

The mean reading of the *Barometer* for the month was 29in·836, being 0in·053 *higher* than the average for the 65 years, 1841–1905.

TEMPERATURE OF THE AIR.

The highest in the month was 100°·0 on August 9; the lowest in the month was 48°·1 on August 31; and the range was 51°·9.
The mean of all the highest daily readings in the month was 81°·1, being 8°·4 *higher* than the average for the 65 years, 1841–1905.
The mean of all the lowest daily readings in the month was 57°·0, being 4°·0 *higher* than the average for the 65 years, 1841–1905.
The mean of the daily ranges was 24°·1, being 4°·4 *greater* than the average for the 65 years, 1841–1905.
The mean for the month was 67°·5, being 5°·8 *higher* than the average for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Daily Duration of Sunshine.	Sun above Horizon.	Wind as deduced from Self-Registering Anemometers. Osler's. General Direction. A.M.	P.M.	Pressure on the Square Foot. Greatest.	Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	P.M.
	hours.	hours.			lbs.	lbs.	miles.		
Aug. 1	5·9	15·4	SSE : S : SSW	SSW : WSW : SW	2·7	0·13	232	0 : 9 : 7, ci.-cu, cu	7, ci.-cu, cu : p.-cl, sh.-r : p.-cl, h
2	11·5	15·4	WSW	SW	2·1	0·07	222	1 : p.-cl : 3, ci, ci.-s, cu	6, cu : 8, ci, ci.-s : 9
3	6·9	15·3	SSW : SW	SW : WSW	2·1	0·16	294	p.-cl : 9 : 9, cu	8, cu, n : 5 : 1
4	10·7	15·2	WSW : W	W : WSW : SW	2·0	0·10	268	1 : 1 : 4, cu	7, cu, n : 8, ci.-s, cu : p.-cl
5	1·8	15·2	SSW : SW	SW : WSW : W	4·8	0·29	327	p.-cl : 10 : 9, s	9, cu, s : 10 : 9
6	10·8	15·1	WSW	WSW	5·0	0·29	390	1 : 1 : 6, cu, cu.-s	8, ci, cu, n : p.-cl : p.-cl
7	12·8	15·1	WSW : W	WSW : SW	1·1	0·05	243	p.-cl : 1 : 5, cu, s	3, cu : 1, li.-cl : 0
8	13·6	15·0	Calm : SSW : S	ESE	1·6	0·05	172	0, m : 0	0 : 0
9	13·3	15·0	Calm : E : NE	S : SSW : SW	0·9	0·01	142	0, m : 0 : 1, ci, cu	2, cu : 2 : 0
10	11·5	14·9	N	N : NNE	2·7	0·20	301	0 : p.-cl : 4	4, cu : 5 : 8
11	8·3	14·9	NNE : NE	ENE : ESE : NNE	2·0	0·18	289	9, l : 10 : 8	1, cu : 1, li.-cl : 1, h
12	12·2	14·8	NE : NNE : ENE	E	4·4	0·20	288	0, m : 1, li.-cl : 3, ci, ci.-s	6, ci, ci.-s : 4, ci, ci.-s : th.-cl, h
13	12·6	14·7	E : ENE	ESE : E	3·5	0·13	212	th.-cl, h : 1 : 2, cu	1, li.-cl : 1 : 0
14	13·5	14·7	E : NE : ENE	SE : ESE : NE	3·3	0·18	251	0, m : 0	0 : 0
15	11·6	14·6	NE : NNE	NNE : NE	2·0	0·20	267	0 : p.-cl : p.-cl	1, ci : 1 : 0
16	12·8	14·6	NNE : N	N : E : SE	1·4	0·05	168	1 : li.-cl : 2	0 : 1 : 0, m
17	8·3	14·5	Calm : SSW	W : SW : WSW	1·6	0·06	180	8, s : 9 : 4, cu	5, ci.-s, cu, so.-ha : ci, ci.-s, so.-ha : 0, m
18	10·0	14·4	WSW : W	W : WNW : NW	2·1	0·15	269	p.-cl : 9, s, so.-ha : 6, ci, ci.-s	6, ci, ci.-cu, cu : p.-cl : p.-cl, l
19	6·5	14·4	N : NNE : NE	Variable : ESE : SE	1·0	0·03	158	0 : 10, m : 3	3, cu, li.-cl : 9, l, t, hy.-sh, so.-ha : 9
20	8·5	14·3	Calm : ESE	E : ESE	1·8	0·13	190	9 : p.-cl : 1, ci	3, ci.-s, ci.-cu, cu : 10, l, t : 9, sh.-r
21	0·2	14·3	E : SE : S	SSW : SW : WSW	0·9	0·03	159	10 : 10, r : 10, r	10, sh.-r : 10, l, t, hy.-r : 9, m
22	0·0	14·2	E : ENE : NE	NE : NNE	0·1	0·04	212	10, m, l : 10, slt.-sh : 10, s, n	10, s, n : 10 : 9
23	3·0	14·1	NE : NNE	NE : SE	0·2	0·01	142	10 : 9, m : p.-cl	9, cu, n : 7, cu, n : p.-cl
24	5·1	14·1	SSE : SW	SW	2·4	0·16	245	9 : p.-cl, li.-cl : 7, ci.-cu, cu	8, slt.-r : p.-cl : 0
25	6·6	14·0	SW : WSW	W : SW : WSW	2·2	0·13	256	0 : p.-cl, m : 8, cu, n, s, slt.-sh	p.-cl, shs.-r : 0
26	6·3	14·0	SW : WSW	SW	2·7	0·24	312	li.-cl : li.-cl : 3, cu	8, cu, cu.-s : 10 : th.-cl
27	4·5	13·9	SW	SW	3·9	0·44	388	p.-cl : 10 : 10, sc, n, th.-r	9 : 5, ci, ci.-cu, cu : 1
28	5·5	13·8	SW : WSW	W : SW : WSW	1·9	0·11	252	p.-cl : li.-cl : 8, li.-cl	10, s, n, r : 10, r : 9, r
29	10·1	13·8	WSW	WSW : W	3·4	0·26	329	p.-cl : 1, ci, cu : 5, cu, s, so.-ha	7, ci, ci.-s, cu, so.-ha : p.-cl : th.-cl
30	4·5	13·7	WSW	SW : ESE : W	2·3	0·02	156	9 : 10, s : 6, cu.-s, s, so.-ha	6, cu, n : 9, n, t.-sm, r : p.-cl, m
31	11·0	13·7	SW	SW	1·4	0·07	213	0, m, f, hy.-d : 0 : 2, ci, ci.-s	4, ci, ci.-cu, cu, so.-ha : ci, ci.-s, ci.-cu : ci.-s, s
Means	8·4	14·6	...	...	...	0·13	243		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27

The mean *Temperature of Evaporation* for the month was 61°·2, being 3°·7 *higher* than
The mean *Temperature of the Dew Point* for the month was 56°·3, being 2°·3 *higher* than
The mean *Degree of Humidity* for the month was 68·1, being 8·2 *less* than
The mean *Elastic Force of Vapour* for the month was $0^{\text{in}}{\cdot}454$, being $0^{\text{in}}{\cdot}036$ *greater* than
The mean *Weight of Vapour in a Cubic Foot of Air* for the month was $5^{\text{grs}}{\cdot}0$, being $0^{\text{gr}}{\cdot}4$ *greater* than
The mean *Weight of a Cubic Foot of Air* for the month was 523 grains, being 5 grains *less* than
} the average for the 65 years, 1841–1905.

The mean amount of *Cloud* for the month (a clear sky being represented by 0, and an overcast sky by 10) was 5·1.

The mean proportion of *Sunshine* for the month (constant sunshine being represented by 1) was 0·576. The maximum daily amount of *Sunshine* was 13·6 hours on August 8.

The highest reading of the *Solar Radiation Thermometer* was 161°·9 on August 4; and the lowest reading of the *Terrestrial Radiation Thermometer* was 40°·0 on August 31.

The *Proportions of Wind* referred to the cardinal points were N. 4, E. 7, S. 8, and W. 10. Two days were calm.

The *Greatest Pressure of the Wind* in the month was 5·0 lbs. on the square foot on August 6. The mean daily *Horizontal Movement of the Air* for the month was 243 miles; the greatest daily value was 390 miles on August 6; and the least daily value was 142 miles on August 9 and 23.

Rain ($0^{\text{in}}{\cdot}005$ or over) fell on 8 days in the month, amounting to $1^{\text{in}}{\cdot}343$, as measured by gauge No. 6 partly sunk below the ground; being $1^{\text{in}}{\cdot}001$ *less* than the average fall for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Phases of the Moon.	BAROMETER. Mean of 24 Hourly Values (corrected and reduced to 32° Fahrenheit).	TEMPERATURE. Of the Air. Highest.	Of the Air. Lowest.	Of the Air. Daily Range.	Of the Air. Mean of 24 Hourly Values.	Of the Air. Excess above Average of 65 Years.	Of Evaporation. Mean of 24 Hourly Values.	Of the Dew Point. Deduced Mean Daily Value.	Difference between the Air Temperature and Dew Point Temperature. Mean.	Greatest.	Least.	Degree of Humidity (Saturation = 100).	TEMPERATURE. Of Radiation. Highest in Sun's Rays.	Of Radiation. Lowest on the Grass.	Of the Earth 3 ft. 2 in. below the Surface of the Soil.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	°	in.	
Sept. 1	...	29·979	79·5	49·2	30·3	64·6	+ 4·8	56·8	50·4	14·2	28·1	3·0	60	133·0	38·0	65·09	0·000	mP : wP : mP
2	Apogee	29·919	89·1	51·3	37·8	72·7	+13·0	62·1	54·2	18·5	36·6	4·3	52	146·9	41·6	64·89	0·000	wP
3	Greatest Declination S.	30·078	78·0	56·5	21·5	66·4	+ 6·8	59·6	54·1	12·3	24·0	4·0	65	122·8	45·7	64·60	0·000	wP
4	...	30·075	74·0	52·1	21·9	64·2	+ 4·7	59·1	54·8	9·4	18·6	2·5	72	120·0	41·6	64·71	0·008	wP : wP, wN : mP
5	...	30·032	80·3	54·7	25·6	65·0	+ 5·6	57·6	51·5	13·5	30·9	4·2	61	130·0	43·2	64·65	0·000	wP : mP : mP
6	...	30·068	86·3	50·1	36·2	69·1	+ 9·9	59·2	51·5	17·6	30·4	4·6	53	135·9	45·0	64·68	0·000	wP : mP : vP
7	...	29·995	91·6	52·3	39·3	71·3	+12·3	60·8	52·8	18·5	37·3	4·4	52	136·0	41·5	64·60	0·000	mP
8	Full	29·840	94·1	52·1	42·0	74·6	+15·8	61·5	52·0	22·6	39·4	8·8	45	147·0	40·0	64·71	0·000	vP, wN : wP : mP
9	...	29·832	65·9	53·1	12·8	62·7	+ 4·1	58·4	54·8	7·9	12·8	5·0	75	76·0	44·7	64·48	0·000	wP
10	In Equator	29·956	72·1	47·2	24·9	61·1	+ 2·7	56·0	51·6	9·5	21·4	4·5	72	127·2	37·0	64·66	0·000	wP
11	...	29·843	83·0	49·1	33·9	66·8	+ 8·7	55·5	46·4	20·4	37·6	6·8	48	133·3	36·5	64·53	0·000	wP : wP : vP
12	...	29·750	88·5	51·7	36·8	71·3	+13·3	60·7	52·7	18·6	36·6	7·1	51	141·1	42·0	64·50	0·008	mP : mP : vP, ssN
13	...	29·779	67·8	55·8	12·0	61·1	+ 3·3	59·4	57·9	3·2	9·5	0·0	90	76·2	53·3	64·12	0·400	wP : mP : mP
14	...	29·906	63·1	48·2	14·9	56·9	− 0·8	53·5	50·3	6·6	16·3	1·4	79	111·6	45·4	64·20	0·000	mP
15	Last Quarter	29·994	62·7	45·6	17·1	53·8	− 3·8	49·1	44·5	9·3	17·3	4·0	71	128·1	40·2	63·90	0·000	mP
16	Greatest Declination N.	30·093	65·1	45·4	19·7	54·1	− 3·4	49·3	44·6	9·5	20·6	3·1	70	128·0	39·4	63·43	0·000	mP
17	Perigee	30·146	62·1	45·1	17·0	52·6	− 4·6	48·6	44·6	8·0	18·0	1·7	75	112·0	33·8	62·88	0·000	mP
18	...	30·136	69·4	40·3	29·1	55·5	− 1·4	50·4	45·6	9·9	19·7	1·9	70	112·0	30·9	62·40	0·000	mP
19	...	29·845	69·3	46·1	23·2	57·3	+ 0·8	51·7	46·6	10·7	20·3	2·5	67	123·0	37·8	62·00	0·048	mP : mP : vP, vN
20	...	29·338	67·6	50·2	17·4	60·0	+ 3·8	56·6	53·6	6·4	14·0	1·1	80	114·0	44·1	61·60	0·150	ssN, vP : wP : mP
21	...	29·312	63·0	45·4	17·6	51·8	− 4·1	47·6	43·3	8·5	18·2	2·3	74	112·0	37·8	61·38	0·160	mP : sP : ssP, ssN
22	New	29·633	62·6	37·7	24·9	49·4	− 6·2	45·5	41·3	8·1	19·3	2·2	74	105·8	29·9	61·16	0·000	mP : sP : mP
23	In Equator	29·672	68·0	39·1	28·9	55·3	− 0·1	49·9	44·8	10·5	22·3	0·6	68	118·5	28·8	60·77	0·124	wP : wP : mP
24	...	29·703	67·0	46·3	20·7	57·4	+ 2·1	53·4	49·7	7·7	18·6	1·0	75	118·8	36·6	60·27	0·150	wP : mP : mP
25	...	29·895	69·1	42·6	26·5	57·2	+ 2·0	52·5	48·2	9·0	18·3	1·9	72	124·3	34·0	60·10	0·000	mP : wP
26	...	29·923	71·7	50·1	21·6	60·4	+ 5·2	55·0	50·3	10·1	21·1	2·6	69	115·0	39·2	60·05	0·000	wP : mP : mP
27	...	30·009	70·9	49·1	21·8	59·2	+ 4·1	54·7	50·7	8·5	17·6	2·2	73	120·6	38·1	60·01	0·000	mP : wP
28	...	30·008	60·9	46·4	14·5	54·6	− 0·3	50·2	46·0	8·6	15·8	1·8	72	97·0	37·0	59·90	0·155	wP : mP : sP
29	...	30·048	60·2	40·3	19·9	50·9	− 3·8	45·4	39·7	11·2	19·3	3·2	66	106·2	31·6	59·81	0·000	mP : sP : sP
30	Apogee : Greatest Dec. S. : First Quarter	29·690	59·4	44·6	14·8	51·1	− 3·3	47·5	43·8	7·3	13·2	2·1	77	89·9	38·3	59·42	0·133	vP, vN : sP
Means	...	29·883	72·1	47·9	24·2	60·3	+ 3·0	54·3	49·1	11·2	22·4	3·2	67·6	118·7	39·1	62·78	Sum 1·336	...
Number of Column for Reference.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

The results apply to the civil day.

The mean reading of the Barometer (Column 2) and the mean temperatures of the Air and Evaporation (Columns 6 and 8) are deduced from the photographic records. The average temperature (Column 7) is deduced from the 65 years' observations, 1841–1905. The temperature of the Dew Point (Column 9) and the Degree of Humidity (Column 13) are deduced from the corresponding temperatures of the Air and Evaporation by means of Glaisher's Hygrometrical Tables. The mean difference between the Air and Dew Point Temperatures (Column 10) is the difference between the numbers in Columns 6 and 9, and the Greatest and Least Differences (Columns 11 and 12) are deduced from the 24 hourly photographic measures of the Dry-bulb and Wet-bulb Thermometers. The readings in Column 16 are taken daily at noon.

The values given in Columns 3, 4, 5, 14, and 15 are derived from eye-readings of self-registering thermometers.

The mean reading of the *Barometer* for the month was 29in·883, being 0in·072 *higher* than the average for the 65 years, 1841–1905.

TEMPERATURE OF THE AIR.

The highest in the month was 94°·1 on September 8 ; the lowest in the month was 37°·7 on September 22 ; and the range was 56°·4.
The mean of all the highest daily readings in the month was 72°·1, being 4°·8 *higher* than the average for the 65 years, 1841–1905.
The mean of all the lowest daily readings in the month was 47°·9, being 1°·2 *lower* than the average for the 65 years, 1841–1905.
The mean of the daily ranges was 24°·2, being 6°·0 *greater* than the average for the 65 years, 1841–1905.
The mean for the month was 60°·3, being 3°·0 *higher* than the average for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Daily Duration of Sunshine.	Sun above Horizon.	Wind as Deduced from Self-Registering Anemometers. Osler's. General Direction. A.M.	Osler's. General Direction. P.M.	Osler's. Pressure on the Square Foot. Greatest.	Osler's. Pressure on the Square Foot. Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	Clouds and Weather. P.M.
	hours.	hours.			lbs.	lbs.	miles.		
Sept. 1	13·2	13·6	SW : WSW	SW : S	1·5	0·07	234	o, hy.-d : 1 : o	o : o
2	12·4	13·5	Calm : S : SW	SW : WSW : W	1·5	0·10	202	o, hy.-d : o, m : o	o : 1 : 1, d
3	7·3	13·4	NNW : N : NE	NNE : NE : SE	0·5	0·00	139	th.-cl : p.-cl : 8, ci.-cu, cu, n	8, cu : p.-cl : o, d
4	4·6	13·4	SE : ESE : Calm	SSE : Calm : WSW	2·2	0·03	116	o, d : p.-cl, m : 8, slt.-sh	p.-cl, slt.-sh : p.-cl : o, m, d
5	8·3	13·3	SW : W : N	N : NE : Calm	0·2	0·00	134	o, m, d : 10, s, th.-cl	7, th.-cl : th.-cl : th.-cl, m
6	11·4	13·3	Calm : WSW	W : WSW	0·6	0·00	143	th.-cl, m, d : th.-cl, h : 1, th.-cl, h, m	2, th.-cl, h : 2, th.-cl, h : 1
7	11·4	13·2	Calm : WSW	W : Calm	0·1	0·00	108	o : o, m : 1, th.-cl	3, th.-cl : 3, th.-cl : 1
8	11·4	13·1	Calm : SW	SW	1·1	0·02	142	o : o : 2, th.-cl	2, th.-cl, h : 3, ci, ci.-cu, cu : p.-cl
9	0·0	13·1	Variable : ENE : NE	NE : ENE	2·1	0·19	299	1 : 10, h : 10, s	10, s : 10, s : 1
10	11·7	13·0	ENE : Calm : SE	ESE	2·9	0·14	218	p.-cl : 1	o : o, d
11	10·4	12·9	SE : ESE : SSE	SSE : Calm	1·0	0·04	172	o : li.-cl : 5, ci.-s, ci.-cu, cu	3, ci, ci.-cu, cu : 2, ci, ci.-s, ci.-cu : th.-cl, lu.-co
12	5·6	12·9	Calm : SE : S	S : SW	2·9	0·03	163	th.-cl : th.-cl : 7, ci, ci.-cu, cu	9, s, n : 10, s, n : 9, slt.-sh
13	0·0	12·8	SW : NNW	NNE : NE	1·5	0·07	233	9 : 10, n, s, shs.-r	10, s, n, glm, r : 10, r : 10, r
14	3·3	12·7	N : NE : NNE	N : NNE	1·6	0·09	241	9 : 9 : 8, cu, n	8, cu, n : 8
15	9·7	12·7	NNE : N	NNE : N	3·9	0·53	402	p.-cl : 1 : 5, cu, n	7, cu : p.-cl : li.-cl
16	10·0	12·6	N : NNE	NNE : NE	2·5	0·23	287	1 : 1 : 3, cu	6, cu, n : p.-cl, cu, cu.-s, n : p.-cl
17	7·1	12·6	NNE : N	N : NNW	0·7	0·00	148	p.-cl, h : p.-cl : 7, cu	5, cu : th.-cl : o, m, d
18	10·7	12·5	NW : WSW : W	W : WSW	1·5	0·07	236	h : o, m, h : o	o : o
19	10·3	12·4	WSW : SW	SW : SSW : S	1·5	0·10	258	o : p.-cl : 2, ci, ci.-cu	4, ci, ci.-s, ci.-cu, so.-ha : p.-cl, l, sh.-r : 10, oc.-shs
20	2·4	12·4	SW	SW : WSW	3·8	0·35	355	9, shs.-r : 9 : 8	10, s, n : p.-cl : p.-cl
21	6·0	12·3	WSW : W	Variable : SW : NNW	1·6	0·02	193	p.-cl : p.-cl, h : 6, cu, cu.-s, th.-cl	p.-cl : 9, l, t, shs.-r : p.-cl, l
22	6·9	12·2	Calm	N : NE : S	0·1	0·00	123	h, hy.-d : 1, h, m : 3, ci, cu, h	5, ci, cu, cu.-s : o : 1, h, d
23	9·4	12·2	S : SSE : SE	SSW : S : SSE	1·8	0·11	229	o, h, hy.-d : 1 : 1, ci, ci.-s, cu	3, ci, ci.-cu, so.-ha : p.-cl, r : 10, oc.-r
24	7·7	12·1	S : WNW : NNW	NW : SW	0·8	0·07	236	10, r : p.-cl : 6, ci, ci.-s, ci.-cu	6, ci.-cu, cu : th.-cl : 1, hy.-d
25	9·8	12·0	WSW : SW	SW : SSW : S	3·5	0·15	262	o, slt.-m : o, slt.-m : 2, ci, ci.-s, ci.-cu	7, ci, ci.-s, cu, n : p.-cl : 10, r
26	10·7	12·0	SW : WSW : W	WSW : W	3·0	0·11	253	p.-cl : 1	1 : o : p.-cl
27	8·6	11·9	WSW	WSW : SW	2·2	0·20	316	1, d : p.-cl : 4, ci, ci.-s, cu	7, ci.-s, ci.-cu : 9 : 9
28	2·2	11·9	W : WNW : NW	NW : WNW	1·5	0·12	268	10, r : 10, slt.-sh : 9, n, s, th.-cl	9, cu.-s, s : p.-cl : th.-cl
29	8·6	11·8	WSW : NW	NW : WNW : SW	4·0	0·25	316	1 : 1 : 5, cu, n	7, ci, ci.-s, cu : 9 : 9
30	2·8	11·8	SW : W	NNW : N	13·8	1·63	616	10, r, w : 10, r, w : 9, cu.-s, n, slt.-sh, st.-w	p.-cl, st.-w : p.-cl, st.-w
Means	7·8	12·7	...	...	...	0·16	235		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27

The mean *Temperature of Evaporation* for the month was 54°·3, being 0°·2 *higher* than the average for the 65 years, 1841–1905.
The mean *Temperature of the Dew Point* for the month was 49°·1, being 2°·1 *lower* than the average for the 65 years, 1841–1905.
The mean *Degree of Humidity* for the month was 67·6, being 12·6 *less* than the average for the 65 years, 1841–1905.
The mean *Elastic Force of Vapour* for the month was 0in·349, being 0in·028 *less* than the average for the 65 years, 1841–1905.
The mean *Weight of Vapour in a Cubic Foot of Air* for the month was 3grs·9, being 0gr·3 *less* than the average for the 65 years, 1841–1905.
The mean *Weight of a Cubic Foot of Air* for the month was 532 grains, being 1 grain *less* than the average for the 65 years, 1841–1905.

The mean amount of *Cloud* for the month (a clear sky being represented by 0, and an overcast sky by 10) was 4·7.

The mean proportion of *Sunshine* for the month (constant sunshine being represented by 1) was 0·616. The maximum daily amount of *Sunshine* was 13·2 hours on September 1.

The highest reading of the *Solar Radiation Thermometer* was 147°·0 on September 8; and the lowest reading of the *Terrestrial Radiation Thermometer* was 28°·8 on September 23.

The *Proportions of Wind* referred to the cardinal points were N. 7, E. 3, S. 6, and W. 10. Four days were calm.

The *Greatest Pressure of the Wind* in the month was 13·8 lbs. on the square foot on September 30. The mean daily *Horizontal Movement of the Air* for the month was 235 miles; the greatest daily value was 616 miles on September 30; and the least daily value was 108 miles on September 7.

Rain (0in·005 or over) fell on 10 days in the month, amounting to 1in·336, as measured by gauge No. 6 partly sunk below the ground; being 0in·812 *less* than the average fall for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Phases of the Moon.	BAROMETER. Mean of 24 Hourly Values (corrected and reduced to 32° Fahrenheit).	TEMPERATURE. Of the Air. Highest.	Lowest.	Daily Range.	Mean of 24 Hourly Values.	Excess above Average of 65 Years.	Of Evaporation. Mean of 24 Hourly Values.	Of the Dew Point. Deduced Mean Daily Value.	Difference between the Air Temperature and Dew Point Temperature. Mean.	Greatest.	Least.	Degree of Humidity (Saturation = 100).	TEMPERATURE. Of Radiation. Highest in Sun's Rays.	Lowest on the Grass.	Of the Earth 3 ft. 2 in. below the Surface of the Soil.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	°	in.	
Oct. 1	...	30·017	51·7	40·8	10·9	46·0	− 8·1	41·5	36·4	9·6	12·9	6·6	70	83·0	32·4	59·04	0·000	mP : mP : sP
2	...	29·888	52·5	34·4	18·1	43·9	− 9·8	40·2	35·8	8·1	15·8	2·8	73	91·2	27·8	58·50	0·000	sP : sP : vP
3	...	29·678	56·4	39·2	17·2	48·2	− 5·1	44·7	40·9	7·3	15·5	2·0	76	99·1	31·9	57·91	0·000	vP : sP : mP
4	...	29·721	55·0	43·0	12·0	47·8	− 5·2	45·2	42·3	5·5	8·0	2·8	83	83·3	37·0	57·39	0·000	mP
5	...	29·815	57·8	45·6	12·2	51·7	− 1·1	49·5	47·3	4·4	10·2	1·9	85	86·3	37·2	57·06	0·078	vP, vN : mP : mP, ssN
6	...	29·888	59·5	44·7	14·8	50·8	− 1·7	48·6	46·3	4·5	12·2	0·2	85	96·0	32·6	56·87	0·090	ssN, vP : mP : mP
7	In Equator	29·754	53·6	44·6	9·0	50·1	− 2·2	49·2	48·2	1·9	3·6	0·2	94	64·5	32·5	56·67	0·104	mP
8	Full	29·894	60·0	39·7	20·3	50·9	− 1·1	49·2	47·4	3·5	9·7	0·0	88	92·7	31·0	56·51	0·000	wP
9	...	30·078	55·1	43·6	11·5	49·2	− 2·4	46·2	43·0	6·2	12·5	0·4	79	93·2	35·4	56·31	0·000	wP : mP : mP
10	...	30·317	58·8	40·2	18·6	49·1	− 2·2	46·3	43·3	5·8	12·9	1·5	81	113·6	31·0	56·11	0·000	mP
11	...	30·254	60·0	46·7	13·3	51·2	+ 0·3	49·1	46·9	4·3	12·2	0·8	85	106·1	37·6	55·96	0·000	wP
12	Perigee	29·981	67·6	41·7	25·9	53·2	+ 2·6	50·8	48·4	4·8	15·8	0·4	84	108·4	31·9	55·80	0·000	wP
13	Greatest Dec. N.	29·822	60·0	48·1	11·9	54·1	+ 3·8	53·9	53·7	0·4	2·6	0·0	99	69·5	41·1	55·61	0·279	wP : wP : wN, wP
14	Last Quarter	29·851	57·4	53·9	3·5	55·3	+ 5·2	54·9	54·5	0·8	2·3	0·0	98	61·0	51·0	55·65	0·014	wwP : wP, wwN : wwP
15	...	30·040	57·4	52·1	5·3	53·9	+ 4·0	52·9	51·9	2·0	7·8	0·8	93	71·0	51·0	55·80	0·022	wwP
16	...	29·996	54·7	51·4	3·3	52·8	+ 3·0	51·7	50·6	2·2	4·8	0·2	93	69·5	50·6	55·90	0·005	...
17	...	29·927	58·6	47·4	11·2	53·2	+ 3·6	51·7	50·2	3·0	8·6	0·0	90	101·0	38·2	55·98	0·000	... : wP : wP
18	...	29·909	62·7	45·1	17·6	51·6	+ 2·3	50·5	49·4	2·2	8·8	0·0	92	87·8	36·6	55·92	0·000	wP
19	...	29·807	64·1	49·0	15·1	56·0	+ 6·9	54·8	53·7	2·3	7·6	0·0	92	90·0	40·0	55·90	0·046	wwP : wwP, wwN : wP, wN
20	In Equator	29·667	63·0	52·7	10·3	57·4	+ 8·6	55·9	54·5	2·9	5·5	0·2	90	87·0	41·0	55·89	0·215	wwP
21	...	29·396	62·0	51·7	10·3	57·1	+ 8·5	54·7	52·5	4·6	8·3	0·6	85	78·0	43·5	56·02	0·075	wwP : wwP, wwN : wP
22	New	28·970	61·5	50·8	10·7	54·5	+ 6·2	52·2	50·0	4·5	13·3	1·0	84	101·4	43·5	56·09	0·455	vP, vN : wP, wN : wP, wN
23	...	29·403	59·0	50·1	8·9	53·2	+ 5·1	50·0	46·8	6·4	13·3	2·5	79	95·0	44·3	56·08	0·000	wP
24	...	29·314	57·0	48·1	8·9	52·5	+ 4·6	51·1	49·7	2·8	5·1	0·2	91	86·6	43·0	55·94	1·422	wP : vP, vN : wP, vN
25	...	29·135	54·3	38·7	15·6	45·8	− 1·9	43·7	41·3	4·5	10·4	0·9	85	91·5	30·5	55·51	0·015	wP : vP, vN : mP
26	...	29·036	55·6	35·1	20·5	46·0	− 1·6	43·6	40·9	5·1	8·9	0·7	83	67·2	28·3	55·27	0·083	wP : wP, wN : wP
27	Greatest Dec. S.: Apogee	28·984	50·5	38·2	12·3	46·2	− 1·3	43·8	41·1	5·1	10·7	2·5	83	64·0	28·2	54·77	0·008	wP : wP, wN : wP
28	...	29·556	50·2	35·6	14·6	42·9	− 4·5	39·6	35·6	7·3	12·2	2·3	76	90·2	28·2	54·30	0·000	mP
29	...	30·007	50·0	28·1	21·9	41·5	− 5·8	39·2	36·3	5·2	13·7	0·3	83	77·0	22·0	53·70	0·188	mP : mP : mP, wwN
30	First Quarter	29·710	59·2	42·7	16·5	53·2	+ 6·0	50·6	48·0	5·2	11·2	0·2	82	77·8	34·7	53·20	0·200	wwP : wwP, wwN : wP
31	...	29·868	54·5	38·2	16·3	46·0	− 1·1	42·8	39·2	6·8	12·7	2·0	78	89·2	29·3	52·98	0·000	wP : mP, wN : mP
Means	...	29·732	57·4	43·9	13·5	50·5	+ 0·5	48·3	46·0	4·5	10·0	1·1	85·1	86·2	36·2	55·96	Sum 3·299	...
Number of Column for Reference.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

The results apply to the civil day.

The mean reading of the Barometer (Column 2) and the mean temperatures of the Air and Evaporation (Columns 6 and 8) are deduced from the photographic records. The average temperature (Column 7) is deduced from the 65 years' observations, 1841–1905. The temperature of the Dew Point (Column 9) and the Degree of Humidity (Column 13) are deduced from the corresponding temperatures of the Air and Evaporation by means of Glaisher's Hygrometrical Tables. The mean difference between the Air and Dew Point Temperatures (Column 10) is the difference between the numbers in Columns 6 and 9, and the Greatest and Least Differences (Columns 11 and 12) are deduced from the 24 hourly photographic measures of the Dry-bulb and Wet-bulb Thermometers. The readings in Column 16 are taken daily at noon.

The values given in Columns 3, 4, 5, 14, and 15 are derived from eye-readings of self-registering thermometers.

The mean reading of the *Barometer* for the month was $29^{\text{in}}\cdot732$, being $0^{\text{in}}\cdot011$ *higher* than the average for the 65 years, 1841–1905.

TEMPERATURE OF THE AIR.

The highest in the month was 67°·6 on October 12 ; the lowest in the month was 28°·1 on October 29 ; and the range was 39°·5.
The mean of all the highest daily readings in the month was 57°·4, being 0°·1 *lower* than the average for the 65 years, 1841–1905.
The mean of all the lowest daily readings in the month was 43°·9, being 0°·7 *higher* than the average for the 65 years, 1841–1905.
The mean of the daily ranges was 13°·5, being 0°·8 *less* than the average for the 65 years, 1841–1905.
The mean for the month was 50°·5, being 0°·5 *higher* than the average for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Daily Duration of Sunshine.	Sun above Horizon.	Wind as Deduced from Self-Registering Anemometers. Osler's. General Direction. A.M.	P.M.	Pressure on the Square Foot. Greatest.	Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	P.M.
	hours.	hours.			lbs.	lbs.	miles.		
Oct. 1	4·2	11·7	NNW : N	N : NNW	7·3	0·73	447	9, w : p.-cl : 8, cu, n, w	8,cu,cu.-s,n,w: p.-cl : 0
2	6·1	11·6	NNW : WSW : N	N : NNW : SW	1·0	0·05	183	p.-cl : 1, h : ci.-cu, cu, h	5, ci.-cu, cu : p.-cl, slt.-m : m
3	6·9	11·5	Calm : E : NE	NE : NNE : N	2·9	0·16	248	10 : m : 4, ci,cu,so.-ha	5, ci, cu,so.-ha: p.-cl : 9, slt.-sh
4	1·6	11·5	N : NNE	NNE : N	4·3	0·38	332	9 : p.-cl : 9, cu, n	10, cu, n : 8, lu.-co : 8, lu.-co
5	0·2	11·4	NNE : NE	ENE : NE	4·0	0·33	357	9, m.-r : 10, m.-r : 10, oc.-slt.-r	10, n, s : 10, n, s : 10, r
6	5·8	11·3	ENE : E	E : ESE : NE	1·3	0·05	186	p.-cl, r : p.-cl, m : 9, ci.-s, cu,so.-ha	7, ci,ci.-s,so.-ha : p.-cl : 2, h, m
7	0·0	11·2	NE : NNE : N	N : NW : W	2·7	0·18	281	p.-cl,h,m : 10 : 10, n, s, sh.-r	10, n, s, r : 10, r : 9, slt.-sh
8	6·7	11·2	WSW:Calm:Variable	ENE : ESE : NE	0·2	0·00	171	9, m : p.-cl, h, m : 6, ci.-s, cu	6, ci, ci.-s, cu: 6, lu.-ha : p.-cl, lu.-ha
9	1·9	11·1	NE	NE : NNE	2·2	0·26	337	p.-cl : 9 : p.-cl	10, n, s : p.-cl : p.-cl, lu.-ha
10	7·0	11·1	NE : E	E	1·9	0·08	227	p.-cl,hy.-d: th.-cl : 4, cu, n	7, cu, n, s : p.-cl : 9, lu.-ha
11	5·2	11·0	ENE : E	E : ESE	2·5	0·08	198	9 : 9	5, cu : 0, hy.-d
12	8·7	10·9	ESE : Calm	SE	0·0	0·00	107	1, h, hy.-d: 0, h, m : 0, m	2, ci,ci.-s,so.-ha : 5,so.-ha,lu.-ha: p.-cl,m,lu.-co
13	0·0	10·8	Calm : Variable	ESE : SE : Calm	0·0	0·00	77	p.-cl, m : f : 10, f, slt.-sh	10, s, oc.-r : 10, r, slt.-f : 10, c.-r
14	0·0	10·8	Calm	ESE : E	0·9	0·03	134	10, r : 10, m, r : 10, slt.-f	10, s : 10
15	0·0	10·7	E : ENE	ENE : E	2·4	0·14	285	9 : 10 : 10, s	10, n, s, th.-r : 10, th.-r : 10, th.-r
16	0·0	10·7	E : ENE	E : ENE	2·0	0·25	327	9, oc.-r : 10 : 10, n, s, m.-r	10, n, s : 10, n, s, oc.-m.-r : 10
17	4·6	10·6	ENE : E	ESE : E	4·1	0·25	276	p.-cl : 10 : p.-cl, n, s	5, ci, ci.-cu,cu : 1 : 0, m
18	4·3	10·6	Calm : ENE	E : ESE	0·2	0·00	100	m, f : f : f	0, slt.-f : 0 : p.-cl, d
19	0·4	10·5	ESE	SE : SSE	0·2	0·00	113	p.-cl, slt.-r : p.-cl, m : 10, n, s, sh.-r	10, n, s, li.-shs : p.-cl, sh.-r
20	0·6	10·4	SSE : S : SW	WSW : SW	6·0	0·39	341	p.-cl : 9, fq.-r : 10, n, s, r, w	9, shs.-r, w : 10, n, s, slt.-sh: 9
21	0·8	10·4	SSW : SSE : S	SSW : SW : S	8·0	0·40	333	9 : p.-cl : 10, r, w	p.-cl, r, w : p.-cl : p.-cl, oc.-r
22	2·4	10·3	S : SSW : SW	WSW	12·0	1·15	546	9,t.-sm,hy.-r,sq: 9, r : 9, oc.-slt.-r,g	8, n,s, st.-w : 9, r, w p.-cl,slt.-sh,st.-w
23	4·8	10·2	W	W : WSW	5·6	0·67	482	p.-cl : p.-cl : 7, cu, n, sc, w	7, cu, n, w : p.-cl, cu, n : 8
24	0·3	10·1	SW : SSW	SW : SSW : WSW	8·0	0·35	334	8 : 9 : 10, r	10, n, s, r, w : 10, hy.-r : 10, r
25	5·1	10·1	WSW : SW	W : SW : WSW	4·0	0·05	250	p.-cl : p.-cl : 7, cu, cu.-s, n,so.-ha	p.-cl, shs.-r : 1 : 1
26	2·2	10·0	SW : S : SSW	S : WSW : SW	8·0	0·39	368	0, hy.-d, ho.-fr : 1 : 10, s, r	p.-cl,n,s,r,w: 1 : p.-cl, w, l
27	0·0	10·0	SW : ENE	E : NE : NNE	2·4	0·28	300	1, ho.-fr : p.-cl : 10, n, s	10, n, s, oc.-r : 9 : p.-cl, d
28	4·5	9·9	NE : NNE	NE : NNE : N	2·3	0·26	283	1, m, d : 1 : 3, ci, ci.-s, ci.-cu	6, ci, ci.-s, ci.-cu : 0, d, ho.-fr
29	4·7	9·9	N : Calm : SW	SSW : S	7·7	0·21	246	0,m,ho.-fr : 0, ho.-fr : 1, ci.-cu	5,ci.-cu,cu,s,so.-ha: 10, s, r : 10, r, w
30	0·1	9·8	SW	SW : WNW : W	12·7	1·53	646	9, r, w : 10, st.-w	10,n,s,slt.-r,g: 10,fq.-r,st.-w: 0
31	7·5	9·7	W : WSW : SW	WSW	4·5	0·35	410	0, ho.-fr : 0 : 1, ci.-s, cu	5, cu,slt.-sh: 1, s : 1, d
Means	3·1	10·7	...	...	...	0·29	288		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27

The mean *Temperature of Evaporation* for the month was 48°·3, being 0°·4 *higher* than
The mean *Temperature of the Dew Point* for the month was 46°·0, being 0°·3 *higher* than
The mean *Degree of Humidity* for the month was 85·1, being 0·1 *greater* than
The mean *Elastic Force of Vapour* for the month was 0in·311, being 0in·004 *greater* than
The mean *Weight of Vapour in a Cubic Foot of Air* for the month was 3grs·5, being the *same* as
The mean *Weight of a Cubic Foot of Air* for the month was 539 grains, being 1 grain *less* than
} the average for the 65 years, 1841–1905.

The mean amount of *Cloud* for the month (a clear sky being represented by 0, and an overcast sky by 10) was 7·0.

The mean proportion of *Sunshine* for the month (constant sunshine being represented by 1) was 0·292. The maximum daily amount of *Sunshine* was 8·7 hours on October 12.

The highest reading of the *Solar Radiation Thermometer* was 113°·6 on October 10; and the lowest reading of the *Terrestrial Radiation Thermometer* was 22°·0 on October 29.

The *Proportions of Wind* referred to the cardinal points were N. 7, E. 9, S. 6, and W. 6. Three days were calm.

The *Greatest Pressure of the Wind* in the month was 12·7 lbs. on the square foot on October 30. The mean daily *Horizontal Movement of the Air* for the month was 288 miles; the greatest daily value was 646 miles on October 30; and the least daily value was 77 miles on October 13.

Rain (0in·005 or over) fell on 17 days in the month, amounting to 3in·299, as measured by gauge No. 6 partly sunk below the ground; being 0in·517 *greater* than the average fall for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Phases of the Moon.	BAROMETER. Mean of 24 Hourly Values (corrected and reduced to 32° Fahrenheit).	TEMPERATURE. Of the Air. Highest.	TEMPERATURE. Of the Air. Lowest.	TEMPERATURE. Of the Air. Daily Range.	TEMPERATURE. Of the Air. Mean of 24 Hourly Values.	TEMPERATURE. Of the Air. Excess above Average of 65 Years.	TEMPERATURE. Of Evaporation. Mean of 24 Hourly Values.	TEMPERATURE. Of the Dew Point. Deduced Mean Daily Value.	Difference between the Air Temperature and Dew Point Temperature. Mean.	Difference between the Air Temperature and Dew Point Temperature. Greatest.	Difference between the Air Temperature and Dew Point Temperature. Least.	Degree of Humidity (Saturation = 100).	TEMPERATURE. Of Radiation. Highest in Sun's Rays.	TEMPERATURE. Of Radiation. Lowest on the Grass.	TEMPERATURE. Of the Earth 3 ft. 2 in. below the Surface of the Soil.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	°	in.	
Nov. 1	...	29.970	54.0	40.1	13.9	45.8	− 1.2	43.0	39.8	6.0	13.4	2.5	80	76.9	30.9	52.73	0.000	wP : mP : mP
2	...	29.837	57.0	45.0	12.0	49.8	+ 3.0	47.6	45.3	4.5	10.0	1.0	85	90.9	36.2	52.47	0.157	wP : wP : wP, wN
3	In Equator	29.778	57.0	39.2	17.8	49.7	+ 3.1	47.3	44.7	5.0	8.8	0.7	84	95.5	31.7	52.22	0.006	wP
4	...	29.627	58.5	49.9	8.6	53.5	+ 7.1	50.4	47.4	6.1	10.6	1.6	79	76.2	43.0	52.15	0.066	wP
5	...	29.367	59.0	43.2	15.8	52.8	+ 6.7	48.2	43.6	9.2	17.9	2.3	71	90.4	37.0	52.27	0.171	wwP, wwN : wP : wP, ssN
6	Full	29.632	51.5	39.0	12.5	44.4	− 1.4	40.9	36.8	7.6	11.5	3.9	74	89.2	34.1	52.40	0.004	wP, wN : mP : mP
7	...	29.730	54.4	38.1	16.3	46.4	+ 1.0	43.8	40.8	5.6	10.2	3.3	82	84.0	31.2	52.18	0.020	wP : mP, wN : wP, wN
8	Perigee	29.463	52.0	40.5	11.5	46.3	+ 1.3	43.9	41.2	5.1	9.1	2.2	84	59.2	34.8	51.87	0.288	vN, vP : wP : mP
9	...	29.354	49.3	35.4	13.9	42.0	− 2.6	38.6	34.4	7.6	10.6	1.9	76	83.1	28.0	51.60	0.251	vP, ssN : mP : mP
10	Greatest Declination N.	29.437	43.7	35.6	8.1	40.4	− 3.9	39.4	38.1	2.3	4.4	1.4	92	58.0	28.2	51.20	0.067	wP : mP : mP, sN
11	...	29.573	46.9	34.1	12.8	41.4	− 2.6	39.5	37.1	4.3	10.8	0.9	86	64.5	27.0	50.74	0.357	mP : mP : wP, wN
12	...	29.206	56.5	45.4	11.1	51.6	+ 7.9	48.7	45.8	5.8	9.6	0.0	81	71.9	38.3	50.09	0.346	wwN, wwP : wwP, wN : wP
13	Last Quarter	29.737	51.0	41.6	9.4	46.8	+ 3.3	43.6	40.0	6.8	9.9	3.5	78	73.0	34.1	50.02	0.171	wP : vN, wP : wP
14	...	30.104	55.7	38.2	17.5	48.4	+ 5.1	45.6	42.6	5.8	8.2	3.8	81	85.0	28.9	50.09	0.000	wP
15	...	29.639	53.5	44.6	8.9	49.1	+ 6.0	46.8	44.3	4.8	8.7	1.7	84	63.0	39.0	50.05	0.012	wP
16	In Equator	29.367	58.0	49.4	8.6	53.0	+10.2	50.6	48.2	4.8	6.4	2.4	84	70.2	45.0	50.15	0.046	wP
17	...	29.106	54.0	47.1	6.9	50.2	+ 7.6	47.9	45.5	4.7	10.1	1.1	84	66.0	41.7	50.29	0.415	wwP, vN : wP : wP, wN
18	...	28.659	48.8	40.8	8.0	44.0	+ 1.6	42.9	41.6	2.4	5.9	1.5	91	52.5	37.7	50.38	0.707	wP, vN
19	...	28.699	45.2	38.2	7.0	41.3	− 1.0	39.5	37.2	4.1	8.4	2.4	86	47.0	35.6	50.12	0.156	wP : mP, vN : vN, wP
20	New	29.208	47.0	39.5	7.5	44.2	+ 2.0	41.9	39.2	5.0	7.7	3.1	82	64.9	33.7	49.81	0.056	wN, wP : wP : mP
21	...	29.369	39.5	29.2	10.3	36.4	− 5.7	33.5	29.3	7.1	14.0	5.3	76	54.9	23.0	49.51	0.000	mP : sP : sP
22	...	29.312	38.0	28.3	9.7	33.5	− 8.6	32.3	30.1	3.4	6.1	2.4	87	42.3	22.4	49.19	0.001	mP
23	Greatest Declination S.	29.512	42.5	34.9	7.6	39.9	− 2.1	37.5	34.4	5.5	7.2	3.5	81	47.5	29.5	48.61	0.029	mP
24	Apogee	29.691	42.8	40.1	2.7	41.1	− 0.9	38.4	35.0	6.1	7.6	5.2	79	52.9	37.0	48.11	0.000	wP : mP : mP
25	...	29.786	43.0	36.2	6.8	39.9	− 2.0	37.3	33.9	6.0	8.4	3.4	79	56.1	29.1	47.90	0.000	mP
26	...	29.744	39.7	32.9	6.8	35.5	− 6.3	34.2	32.2	3.3	8.0	2.0	88	57.9	26.4	47.67	0.015	mP
27	...	29.718	36.6	30.5	6.1	33.7	− 8.0	33.2	32.3	1.4	2.7	1.3	95	44.0	24.0	47.38	0.044	mP
28	...	29.847	49.0	35.5	13.5	42.3	+ 0.8	41.4	40.3	2.0	4.0	0.6	93	53.4	25.3	47.01	0.000	mP : wP : wP
29	First Quarter	30.117	47.5	30.7	16.8	42.8	+ 1.6	41.5	39.9	2.9	6.8	0.0	90	49.0	26.8	46.71	0.031	wP, wN : mP : vP
30	...	30.168	45.8	30.1	15.7	40.3	− 0.7	39.8	39.2	1.1	3.7	0.0	96	54.3	26.8	46.72	0.006*	mP : wP : wP
Means	...	29.559	49.2	38.4	10.8	44.2	+ 0.7	42.0	39.3	4.9	8.7	2.2	83.6	65.8	32.2	50.05	Sum 3.422	...
Number of Column for Reference.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

The results apply to the civil day.

The mean reading of the Barometer (Column 2) and the mean temperatures of the Air and Evaporation (Columns 6 and 8) are deduced from the photographic records. The average temperature (Column 7) is deduced from the 65 years' observations, 1841–1905. The temperature of the Dew Point (Column 9) and the Degree of Humidity (Column 13) are deduced from the corresponding temperatures of the Air and Evaporation by means of Glaisher's Hygrometrical Tables. The mean difference between the Air and Dew Point Temperatures (Column 10) is the difference between the numbers in Columns 6 and 9, and the Greatest and Least Differences (Columns 11 and 12) are deduced from the 24 hourly photographic measures of the Dry-bulb and Wet-bulb Thermometers. The readings in Column 16 are taken daily at noon.

The values given in Columns 3, 4, 5, 14, and 15 are derived from eye-readings of self-registering thermometers.

* Rainfall (Column 17). $0^{in}.003$ of the amount measured on November 30 is derived from fog.

The mean reading of the *Barometer* for the month was $29^{in}.559$, being $0^{in}.199$ *lower* than the average for the 65 years, 1841–1905.

TEMPERATURE OF THE AIR.

The highest in the month was 59°.0 on November 5; the lowest in the month was 28°.3 on November 22; and the range was 30°.7.
The mean of all the highest daily readings in the month was 49°.2, being 0°.2 *higher* than the average for the 65 years, 1841–1905.
The mean of all the lowest daily readings in the month was 38°.4, being 0°.5 *higher* than the average for the 65 years, 1841–1905.
The mean of the daily ranges was 10°.8, being 0°.3 *less* than the average for the 65 years, 1841–1905.
The mean for the month was 44°.2, being 0°.7 *higher* than the average for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Daily Duration of Sunshine.	Sun above Horizon.	Wind as Deduced from Self-Registering Anemometers. Osler's. General Direction. A.M.	P.M.	Pressure on the Square Foot. Greatest.	Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	P.M.
	hours.	hours.			lbs.	lbs.	miles.		
Nov. 1	8·3	9·7	WSW : W	WSW : SW : SSW	1·8	0·14	321	th.-cl : 0 : 1	1, ci, cu : 4, lu.-co : p.-cl, lu.-ha, lu.-co, d
2	0·4	9·6	SSW : SW	SW : WSW	4·7	0·23	353	p.-cl, slt.-sh : 10, s : 10, s, so.-ha	10, n, s : 10, fq.-r : 9
3	4·9	9·5	WSW : SW : SSW	SW : SSW	6·4	0·58	432	th.-cl : li.-cl : 7, ci, ci.-s, ci.-cu	9, r, w : 10, w : 10, oc.-slt.-r, w
4	1·6	9·5	SW : WSW	SW : SSW	12·0	0·72	516	10, slt.-r, w : 9 : 6, ci, ci.-s, ci.-cu	10, n, s : 10 : 10, oc.-m.-r, st.-w
5	6·2	9·4	SW : WSW	WSW	16·5	2·58	817	10, fq.-m.-r, g : 10, r, hy.-sh, st.-w : p.-cl, sh.-r, g	p.-cl, cu.-s, sl, g : p.-cl, slt.-sh, st.-w : 1, w
6	7·6	9·4	WSW : SW	WSW	10·0	1·33	640	p.-cl, li.-shs, w : 2, cu, st.-w	2, cu, st.-w : 1, cu, w : 0
7	4·2	9·3	WSW : SW : SSW	WSW : SW : SSW	7·5	0·44	436	0 : p.-cl, n, s : p.-cl, r, w	7, ci.-cu, cu, sc : p.-cl : 10, sc, li.-shs, lu.-ha, w
8	0·0	9·3	SW : SSW	SW : SSW	11·0	0·40	365	10, slt.-r, hy.-sh, hl, st.-w : 10, oc.-slt.-r : 10, n, s	10, n, s, slt.-sh : 10 : 9
9	5·0	9·2	S : SSE : SW	SW : SSW : S	3·7	0·07	266	p.-cl, r : 10, hy.-r : p.-cl, ci, ci.-s, ci.-cu	p.-cl, li.-shs : 0 : 1, ho.-fr
10	0·5	9·2	S : SSW	WSW : W	0·9	0·03	237	p.-cl, ho.-fr, l : 10, sh.-r : 9, sh.-r	10, fq.-th.-r : 10, fq.-r : p.-cl
11	2·8	9·1	WSW : SW	S : SE : ESE	3·2	0·10	207	p.-cl, ho.-fr : p.-cl	9, n, s : 10, r : 10, r
12	1·9	9·0	S : SW	SW : WSW	10·5	1·14	572	10, r : 9, st.-w : 8, sh.-r, w	10, shs.-r, w : 9, cu, n, st.-w : 0, w
13	0·3	9·0	SW : WSW	WSW	8·4	0·73	473	1, w : p.-cl, r, w : 10, r, w	9, ci.-cu, n, s : p.-cl : th.-cl
14	3·5	8·9	SW : SSW : S	SW : SSW	4·1	0·27	345	th.-cl, lu.-ha : li.-cl : 9, li.-cl, n, s	8, ci.-cu, cu, n : p.-cl : p.-cl
15	0·0	8·9	SSW : S	SSW : SW	7·7	0·51	415	p.-cl : 10	10, n, slt.-sh : p.-cl, li.-cl, cu : 8, li.-shs, w
16	0·5	8·8	WSW : SW	WSW : SW	9·4	1·07	577	9, slt.-sh, st.-w : 10, sh.-r, st.-w : 10, n, s, sc, w	9, n, s, sc, sh.-r : p.-cl : 10, m.-r
17	0·9	8·8	SSW : SW	SW : SSW	8·5	0·84	490	10, r : 10, r, w : 9, n, s, w	p.-cl, ci, ci.-s, n : p.-cl, sh.-r : p.-cl, oc.-shs, w
18	0·0	8·7	SSW : SSE	Variable : N : NW	5·6	0·38	342	9, r : 10, r : 10, n, s, r	10, c.-r : 10, r, w : 10, w
19	0·0	8·7	W	W : WNW : NW	9·2	1·03	644	p.-cl : 10, w : 10, ci.-s, slt.-r, st.-w, so.-ha	10, c.-r, st.-w : 10, fq.-r, w : 10, r, w
20	0·2	8·6	NW	NNW : N	3·8	0·34	346	10, r : p.-cl : 10, n, s	9, cu, n : 9 : p.-cl
21	3·0	8·6	N	N : NNW : WSW	1·3	0·08	212	9 : 9 : 6, cu, cu.-s	2, cu, cu.-s : 10, th.-cl : p.-cl, s, ho.-fr
22	0·0	8·5	WSW : SW : N	E : NE	0·7	0·03	193	p.-cl, ho.-fr : 9, slt.-sn : 10, glm, slt.-f	10, n, s : 9 : p.-cl, slt.-f, ho.-fr
23	0·0	8·5	NE : ENE	E : ENE	13·0	1·12	547	p.-cl, ho.-fr : 10, st.-w	10, oc.-r, sl, st.-w : 10, oc.-r, sl, w : 10, w
24	0·1	8·5	E : ENE	NE : ENE	12·7	1·31	584	10, w : 10, w : 9, cu, n, w	10, cu, n, st.-w : 10, w
25	0·5	8·4	ENE : NE	ENE : NE	6·5	0·65	421	10, w : 9 : 9, ci, ci.-s, cu, w	8, ci, ci.-s, cu, w : 7, ci, ci.-s, ci.-cu : p.-cl, ho.-fr
26	2·1	8·3	NE : NNE	NE	2·3	0·15	245	p.-cl, ho.-fr : p.-cl : 7, ci.-s, cu, sc	9, slt.-r, sl, sn : 10 : 10, slt.-sn
27	0·0	8·3	Calm : Variable	SW : S : SE	0·6	0·01	108	10, slt.-sn : 10, slt.-sn : 10, n, s, sn, r, sl	p.-cl, sl : p.-cl, ho.-fr : 10, oc.-sn
28	0·0	8·3	S : SE	S : SSE	0·6	0·03	174	p.-cl : 10 : 10, n, s	9, ci.-cu, n, s : 9 : 10
29	0·0	8·2	SSE : SW : WSW	N : Calm	0·5	0·01	159	9, sh.-r : 10 : 9, s, slt.-f	8, s, slt.-f : s, f : tk.-f, ho.-fr
30	0·0	8·2	Calm : SSE	SW : SSW : S	0·8	0·03	159	tk.-f : 10, slt.-f : 10, n, s	10, n, s : 10
Means	1·8	8·9	...	...	...	0·55	387		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27

The mean *Temperature of Evaporation* for the month was 42°·0, being 0°·1 *higher* than
The mean *Temperature of the Dew Point* for the month was 39°·3, being 0°·7 *lower* than
The mean *Degree of Humidity* for the month was 83·6, being 3·7 *less* than
The mean *Elastic Force of Vapour* for the month was 0in·240, being 0in·007 *less* than
The mean *Weight of Vapour in a Cubic Foot of Air* for the month was 2grs·8, being the *same* as
The mean *Weight of a Cubic Foot of Air* for the month was 543 grains, being 5 grains *less* than
} the average for the 65 years, 1841–1905.

The mean amount of *Cloud* for the month (a clear sky being represented by 0, and an overcast sky by 10) was 7·8.

The mean proportion of *Sunshine* for the month (constant sunshine being represented by 1) was 0·205. The maximum daily amount of *Sunshine* was 8·3 hours on November 1.

The highest reading of the *Solar Radiation Thermometer* was 95°·5 on November 3; and the lowest reading of the *Terrestrial Radiation Thermometer* was 22°·4 on November 22.

The *Proportions of Wind* referred to the cardinal points were N. 4, E. 4, S. 11, and W. 10. One day was calm.

The *Greatest Pressure of the Wind* in the month was 16·5 lbs. on the square foot on November 5. The mean daily *Horizontal Movement of the Air* for the month was 387 miles; the greatest daily value was 817 miles on November 5; and the least daily value was 108 miles on November 27.

Rain (0in·005 or over) fell on 21 days in the month, amounting to 3in·422, as measured by gauge No. 6 partly sunk below the ground; being 1in·202 *greater* than the average fall for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Phases of the Moon.	BAROMETER. Mean of 24 Hourly Values (corrected and reduced to 32° Fahrenheit).	TEMPERATURE. Of the Air. Highest.	Lowest.	Daily Range.	Mean of 24 Hourly Values.	Excess above Average of 65 Years.	Of Evaporation. Mean of 24 Hourly Values.	Of the Dew Point. Deduced Mean Daily Value.	Difference between the Air Temperature and Dew Point Temperature. Mean.	Greatest.	Least.	Degree of Humidity (Saturation = 100).	TEMPERATURE. Of Radiation. Highest in Sun's Rays.	Lowest on the Grass.	Of the Earth 3 ft. 2 in. below the Surface of the Soil.	Rain collected in Gauge No. 6, whose receiving surface is 5 inches above the Ground.	Electricity.
		in.	°	°	°	°	°	°	°	°	°	°		°	°	°	in.	
Dec. 1	In Equator	29·997	46·7	41·5	5·2	44·6	+ 3·7	43·6	42·5	2·1	3·8	1·1	93	50·0	35·5	46·71	0·000	wP
2	...	29·880	48·8	44·2	4·6	46·1	+ 5·2	45·1	44·0	2·1	3·8	1·1	93	53·7	41·2	46·71	0·000	wP
3	...	29·672	53·8	43·1	10·7	49·0	+ 7·9	47·7	46·3	2·7	7·8	0·8	91	65·2	32·3	47·00	0·093	wP
4	...	29·722	45·9	33·2	12·7	41·1	− 0·2	39·5	37·5	3·6	7·6	1·1	87	65·8	26·6	47·27	0·106	wP : vN, vP : mP
5	...	29·513	49·2	36·4	12·8	44·3	+ 2·8	42·4	40·1	4·2	5·9	1·3	85	65·6	26·8	47·39	0·318	wP, vN : mP
6	Full	29·850	45·6	30·8	14·8	37·6	− 3·9	36·1	34·1	3·5	8·4	1·3	87	55·8	22·4	47·20	0·000	mP
7	Perigee : Greatest Declination N.	29·447	45·4	33·1	12·3	41·7	+ 0·4	39·7	37·2	4·5	7·6	1·1	85	53·0	25·4	46·97	0·306	wP, vN : vN, wP : mP
8	...	29·423	43·0	28·9	14·1	37·2	− 3·8	35·3	32·7	4·5	8·3	1·3	84	50·0	21·0	46·62	0·106	mP : mP : mP, vN
9	...	29·311	43·8	36·1	7·7	40·5	− 0·1	38·4	35·7	4·8	10·1	0·5	84	57·0	28·6	46·12	0·133	vN, vP : mP : sP
10	...	29·116	48·0	39·1	8·9	45·6	+ 5·2	44·1	42·4	3·2	5·8	1·7	89	47·9	32·0	46·00	0·454	wP, vN
11	...	29·040	48·0	36·6	11·4	43·3	+ 3·1	40·1	36·3	7·0	9·2	3·3	76	66·5	29·1	45·88	0·000	wP : mP : mP
12	Last Quarter	29·473	49·5	34·1	15·4	41·0	+ 0·7	40·0	38·7	2·3	5·7	0·4	92	59·8	26·0	45·80	0·000	mP
13	In Equator	29·359	47·8	41·0	6·8	44·4	+ 3·9	43·4	42·2	2·2	5·9	1·1	92	64·0	30·3	45·62	0·036	wP : wP, mN : mP
14	...	29·440	50·0	41·3	8·7	45·9	+ 5·2	44·3	42·5	3·4	6·4	0·9	88	62·4	36·0	45·70	0·099	wP, vN : mP : wP
15	...	29·338	50·7	41·7	9·0	45·8	+ 5·0	44·1	42·1	3·7	6·9	1·3	87	59·4	33·8	45·71	0·423	wP, vN : wP : mP
16	...	29·707	51·7	38·3	13·4	45·0	+ 4·3	44·0	42·8	2·2	4·7	1·3	92	66·6	30·1	45·74	0·005	mP : mP : wP
17	...	29·744	53·9	48·9	5·0	51·0	+10·6	49·4	47·7	3·3	6·8	1·8	89	63·5	45·6	45·82	0·087	wP : wP, wN : wN, wP
18	...	29·633	51·0	47·3	3·7	49·4	+ 9·4	47·9	46·3	3·1	6·8	1·9	90	55·0	44·0	46·20	0·070	wP
19	...	29·568	52·7	46·0	6·7	50·4	+10·9	49·3	48·1	2·3	6·1	1·1	92	63·0	37·0	46·53	0·109	wwP : wN, wP : wP, mN
20	New	29·251	51·0	42·3	8·7	48·0	+ 9·0	46·5	44·9	3·1	8·1	1·0	90	50·5	36·6	46·87	0·390	wP, wwN : wP, vN : mP
21	Greatest Declination S.	29·218	45·3	41·1	4·2	43·4	+ 4·7	42·5	41·4	2·0	4·4	1·1	93	47·0	35·8	47·02	0·278	wP, vN : wN, wP : vN, mP
22	Apogee	29·440	45·9	39·3	6·6	41·6	+ 3·2	40·5	39·1	2·5	4·9	0·0	92	43·7	33·0	46·94	0·342	wP : mP, vN : vN, vP
23	...	29·796	42·3	35·1	7·2	39·7	+ 1·5	38·2	36·2	3·5	4·0	1·5	88	42·3	27·8	46·59	0·028	wN, wP : mP : mP, wN
24	...	29·452	52·8	41·7	11·1	47·4	+ 9·2	45·6	43·6	3·8	9·1	0·6	88	61·1	34·6	46·47	0·194	wN, wP : wP, wN : mP
25	...	29·276	44·5	40·0	4·5	42·5	+ 4·1	40·5	38·1	4·4	8·3	0·9	85	59·0	31·9	46·16	0·135	vN, wP : mP : mP, wwN
26	...	29·486	49·4	39·2	10·2	43·2	+ 4·6	42·0	40·6	2·6	4·4	0·4	90	49·5	31·5	46·09	0·260	wP : mP, vN : wN, wP
27	...	29·693	49·2	38·1	11·1	41·5	+ 2·7	40·1	38·3	3·2	6·5	1·4	89	48·4	29·0	45·83	0·010	wP : mP : mP, mN
28	In Equator : First Quarter	29·882	51·7	40·1	11·6	47·0	+ 8·1	46·0	44·9	2·1	4·9	0·2	93	56·0	39·0	45·72	0·036	wP
29	...	29·909	50·0	46·2	3·8	48·2	+ 9·2	46·7	45·1	3·1	5·4	2·5	89	54·0	40·9	45·81	0·000	wP : mP : mP
30	...	29·941	51·3	43·5	7·8	48·6	+ 9·7	47·2	45·7	2·9	4·5	1·1	90	61·6	33·6	45·98	0·000	wP
31	...	30·172	47·4	42·1	5·3	44·9	+ 6·2	44·3	43·6	1·3	4·1	0·0	95	57·3	31·1	46·35	0·002*	wP
Means	...	29·573	48·6	39·7	8·9	44·5	+ 4·6	43·0	41·3	3·2	6·3	1·1	89·0	56·6	32·5	46·35	Sum 4·020	...
Number of Column for Reference.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

The results apply to the civil day.

The mean reading of the Barometer (Column 2) and the mean temperatures of the Air and Evaporation (Columns 6 and 8) are deduced from the photographic records. The average temperature (Column 7) is deduced from the 65 years' observations, 1841–1905. The temperature of the Dew Point (Column 9) and the Degree of Humidity (Column 13) are deduced from the corresponding temperatures of the Air and Evaporation by means of Glaisher's Hygrometrical Tables. The mean difference between the Air and Dew Point Temperatures (Column 10) is the difference between the numbers in Columns 6 and 9, and the Greatest and Least Differences (Columns 11 and 12) are deduced from the 24 hourly photographic measures of the Dry-bulb and Wet-bulb Thermometers. The readings in Column 16 are taken daily at noon.

The values given in Columns 3, 4, 5, 14, and 15 are derived from eye-readings of self-registering thermometers.

* Rainfall (Column 17). Amount entered on December 31 is derived from fog.

The mean reading of the *Barometer* for the month was $29^{in}\cdot573$, being $0^{in}\cdot212$ *lower* than the average for the 65 years, 1841–1905.

TEMPERATURE OF THE AIR.

The highest in the month was $53^{\circ}\cdot9$ on December 17; the lowest in the month was $28^{\circ}\cdot9$ on December 8; and the range was $25^{\circ}\cdot0$.
The mean of all the highest daily readings in the month was $48^{\circ}\cdot6$, being $4^{\circ}\cdot4$ *higher* than the average for the 65 years, 1841–1905.
The mean of all the lowest daily readings in the month was $39^{\circ}\cdot7$, being $4^{\circ}\cdot7$ *higher* than the average for the 65 years, 1841–1905.
The mean of the daily ranges was $8^{\circ}\cdot9$, being $0^{\circ}\cdot3$ *less* than the average for the 65 years, 1841–1905.
The mean for the month was $44^{\circ}\cdot5$, being $4^{\circ}\cdot6$ *higher* than the average for the 65 years, 1841–1905.

MONTH and DAY, 1911.	Daily Duration of Sunshine.	Sun above Horizon.	Wind as deduced from Self-Registering Anemometers. Osler's. General Direction. A.M.	P.M.	Pressure on the Square Foot. Greatest.	Mean of 24 Hourly Measures.	Robinson's. Horizontal Movement of the Air.	Clouds and Weather. A.M.	P.M.
	hours.	hours.			lbs.	lbs.	miles.		
Dec. 1	0·0	8·2	S : SSW : SW	SSW : SW	0·7	0·04	199	9 : 10 : 10	10, n, s : 10
2	0·0	8·1	SW : SSW : S	S : SSW	3·4	0·17	266	10 : 10 : 10, m.-r	10 : 10 : 10, oc.-m.-r
3	1·6	8·1	SSW : SW	WSW : SW	1·7	0·17	299	10, r : 9, r : 8, cu, n, s	p.-cl, sh.-r : p.-cl, d : p.-cl, d, sh.-r
4	2·9	8·1	SW : SSW : WSW	W : SW : S	2·0	0·08	275	p.-cl : p.-cl, r : p.-cl, r	5, cu, n : 0, ho.-fr : p.-cl, ho.-fr, slt.-sh
5	0·7	8·0	S : WSW	WSW	5·9	0·38	331	10 : 10, r, w : 10, r	p.-cl, ci, ci.-s, cu : th.-cl, lu.-ha : 0, ho.-fr
6	6·3	8·0	WSW : SW	SW : SSW : S	1·0	0·03	214	0, ho.-fr : 0, ho.-fr : 0, slt.-f	0 : 0, ho.-fr : 10, s, lu.-ha
7	0·0	8·0	S : SSW	N : NW : W	8·5	0·79	430	10, w : 10, r, w : 10, n, sc, c.-r	10, r, glm, w : p.-cl : th.-cl, h, ho.-fr
8	2·4	8·0	SW : S	S	5·9	0·34	324	0, ho.-fr : 0, ho.-fr : p.-cl, ci, ci.-s, s, so.-ha	10, n, s, slt.-sh : 10, sc, fq.-r, w
9	4·7	7·9	SW : WSW : W	WSW : SW : SSW	4·0	0·28	363	9, r : 10, r : p.-cl, ci, ci.-s, n, r	1, cu, h : 0, ho.-fr : p.-cl, ho.-fr
10	0·0	7·9	SSW : S	S : SW	17·5	1·55	599	10, th.-cl, lu.-ha : 10, sc, r : 10, sc, c.-r, g	10, c.-r, g : 10, c.-r, st.-w : p.-cl, r, w
11	5·8	7·9	SW : WSW	WSW	12·5	1·19	574	p.-cl, st.-w : p.-cl, st.-w : p.-cl, so.-ha, w	2, cu, w : 1 : 0, ho.-fr
12	1·8	7·9	WSW : SW : SSW	SW : SSW : S	1·2	0·06	262	0, ho.-fr : 0 : 7, cu, slt.-sh	4, cu, n : 1 : p.-cl, m, hy.-d
13	1·3	7·8	SSE : SE	SSE : S	4·7	0·41	325	9 : 10 : p.-cl, sh.-r	10, ci.-s, r, w : p.-cl, ci, ci.-s, slt.-sh : p.-cl, d
14	5·3	7·8	SE : WSW : SW	SSW : S : SE	2·6	0·16	285	p.-cl, r : 10, r : 2	5, ci, ci.-s, so.-ha, prh : 9, oc.-slt.-r : 10, slt.-sh
15	0·0	7·8	SE : S : SW	WSW : SW	9·3	0·79	476	10, r : 10, fq.-r, w	9, oc.-slt.-r, st.-w : p.-cl : p.-cl
16	2·7	7·8	SW : SSW	SSW : SW	3·6	0·27	351	0, ho.-fr : 0, ho.-fr : 3, ci.-cu, cu	9, oc.-slt.-r : 10, n, s, oc.-slt.-r : 10, slt.-r
17	0·0	7·8	SSW : SW	SW : SSW	7·3	1·08	536	10, th.-r, w : 10, fq.-th.-r, w : 10, m.-r, w	10, m.-r, so.-ha, w : 10, r : 9
18	0·0	7·8	SSW : S	S : SSW	5·4	0·75	466	10 : 9, oc.-slt.-r : 10, n, s, oc.-slt.-r	10, n, s, slt.-r, w : 10, r, w : 10, slt.-r, w
19	1·5	7·8	SSW : SW	SW : SSW : S	2·6	0·29	344	10, slt.-r : 9, fq.-r : 7, sh.-r, so.-ha	2, cu, cu.-s : 0 : p.-cl, sh.-r
20	0·0	7·8	S : SSE	WNW : W : SW	14·0	0·83	487	10 : 10, r : 10, r	10, r, hy.-shs, g : p.-cl, g : 1
21	0·0	7·8	Variable	N : W	5·0	0·33	355	p.-cl : 10, r : 10, n, s, fq.-r	10, fq.-r : 10, r, w : p.-cl
22	0·0	7·8	WSW : SW	S : SE : N	2·5	0·20	323	p.-cl : 1 : 10, s	10, r : 10, c.-r : 10, oc.-slt.-r, slt.-f, m
23	0·0	7·8	NNE : N : W	WSW : SW : S	6·0	0·27	295	9, w : p.-cl : s, slt.-f	s, slt.-f, so.-ha : s, slt.-f, ho.-fr : p.-cl, ho.-fr, r
24	1·7	7·8	S : SSW : SW	WSW : SW : S	7·6	0·82	522	10, slt.-r, : 10, n, s, slt.-r, w	p.-cl, w : 1 : p.-cl, r
25	1·8	7·8	SW : WSW	W : WSW	3·6	0·40	428	9, r : p.-cl : 6, ci, cu	7, cu, n : 9, oc.-slt.-r : 0, w
26	0·0	7·8	WSW : W	SW : S : W	2·7	0·31	406	0 : li.-cl : 10, ci.-s, s, r	10, r, hy.-shs : 10, fq.-r : 9
27	0·3	7·8	NW : N : WSW	W : SW	6·1	0·14	210	10, w : 10 : 7, ci, ci.-s, slt.-m, so.-ha	7, s, slt.-f : s, slt.-f : 10, slt.-f, slt.-r
28	0·0	7·8	S : SSW : WSW	W	5·0	0·33	376	10, slt.-r : 10, fq.-m.-r, slt.-f : 10, oc.-m.-r	10, n, s, sc, w : 10, sc, w : 10
29	0·0	7·8	W : WSW	WSW : SW	2·8	0·19	327	10 : 9 : 10, s	10, n, s : 10
30	0·0	7·8	SW : WSW	W : Variable : Calm	2·5	0·14	274	10 : 10 : 9, ci, ci.-s, cu	10, n, s : 9 : 9, tk.-f
31	0·3	7·8	Calm : W	W : SW : WSW	0·2	0·00	164	tk.-f : 10, f : 9, slt.-f	10, n, s : 9, lu.-co
Means	1·3	7·9	...	...	...	0·41	358		
Number of Column for Reference.	19	20	21	22	23	24	25	26	27

The mean *Temperature of Evaporation* for the month was 43°·0, being 4°·5 *higher* than
The mean *Temperature of the Dew Point* for the month was 41°·3, being 4°·6 *higher* than
The mean *Degree of Humidity* for the month was 89·0, being 0·4 *greater* than
The mean *Elastic Force of Vapour* for the month was 0in·260, being 0in·042 *greater* than
The mean *Weight of Vapour in a Cubic Foot of Air* for the month was 2grs·9, being 0gr·3 *greater* than
The mean *Weight of a Cubic Foot of Air* for the month was 543 grains, being 9 grains *less* than
} the average for the 65 years, 1841–1905.

The mean amount of *Cloud* for the month (a clear sky being represented by 0, and an overcast sky by 10) was 7·2.

The mean proportion of *Sunshine* for the month (constant sunshine being represented by 1) was 0·168. The maximum daily amount of *Sunshine* was 6·3 hours on December 6.

The highest reading of the *Solar Radiation Thermometer* was 66°·6 on December 16; and the lowest reading of the *Terrestrial Radiation Thermometer* was 21°·0 on December 8.

The *Proportions of Wind* referred to the cardinal points were N. 1, E. 1, S. 16, and W. 12. One day was calm.

The *Greatest Pressure of the Wind* in the month was 17·5 lbs. on the square foot on December 10. The mean daily *Horizontal Movement of the Air* for the month was 358 miles; the greatest daily value was 599 miles on December 10; and the least daily value was 164 miles on December 31.

Rain (0in·005 or over) fell on 23 days in the month, amounting to 4in·020, as measured by gauge No. 6 partly sunk below the ground; being 2in·193 *greater* than the average fall for the 65 years, 1841–1905.

HIGHEST and LOWEST READINGS of the BAROMETER, reduced to 32° Fahrenheit, as extracted from the PHOTOGRAPHIC RECORDS.

MAXIMA. Greenwich Civil Time, 1911.	MAXIMA. Reading.	MINIMA. Greenwich Civil Time, 1911.	MINIMA. Reading.
January		January	
d h m	in.	d h m	in.
		1. 12. 40	29·899
1. 19. 15	29·967	3. 3. 15	29·592
3. 19. 10	30·046	6. 17. 0	29·579
8. 23. 40	30·178	9. 15. 25	30·039
10. 10. 10	30·397	12. 1. 10	29·196
17. 10. 40	30·597	21. 17. 20	30·061
23. 23. 40	30·258	25. 15. 30	30·059
28. 11. 10	30·332	30. 4. 30	30·132
February		February	
2. 1. 50	30·610	5. 5. 50	30·315
6. 23. 55	30·491	10. 18. 0	29·784
14. 9. 45	30·369	15. 4. 0	30·232
15. 20. 45	30·371	17. 3. 5	29·819
17. 14. 10	30·005	19. 1. 40	29·252
21. 1. 50	29·951	22. 5. 30	29·379
22. 22. 25	29·795	23. 14. 30	29·072
24. 22. 15	29·691	25. 13. 40	29·385
25. 22. 20	29·598	26. 3. 45	29·477
26. 22. 45	29·999	28. 14. 40	29·282
March		March	
1. 22. 5	30·127	2. 5. 40	30·030
2. 21. 35	30·205	4. 18. 0	29·816
5. 9. 20	30·024	6. 14. 10	29·732
7. 22. 25	30·003	9. 7. 0	29·714
10. 5. 35	29·969	11. 5. 50	29·695
11. 22. 30	29·827	13. 3. 50	29·086
14. 10. 35	29·482	15. 15. 35	29·234
19. 9. 45	29·700	21. 4. 45	29·548
23. 11. 10	29·872	25. 3. 50	29·775
25. 19. 20	29·940	27. 17. 20	29·610
28. 21. 40	29·729	30. 15. 30	29·452
April		April	
4. 0. 50	30·069	5. 4. 10	29·846
6. 21. 50	30·049	7. 12. 10	29·968
9. 8. 0	30·182	10. 15. 20	29·818
12. 0. 5	30·134	12. 17. 30	30·006
13. 20. 20	30·246	18. 20. 40	29·308
21. 21. 15	30·288	26. 5. 15	29·545
26. 20. 15	29·721	27. 18. 5	29·210
28. 12. 5	29·453	28. 22. 20	29·171

MAXIMA. Greenwich Civil Time, 1911.	MAXIMA. Reading.	MINIMA. Greenwich Civil Time, 1911.	MINIMA. Reading.
May		May	
d h m	in.	d h m	in.
1. 22. 25	29·849	2. 19. 40	29·668
3. 6. 15	29·753	3. 19. 15	29·537
6. 10. 30	30·112	14. 12. 20	29·423
20. 21. 25	30·059	22. 17. 20	29·795
24. 21. 0	29·920	26. 11. 55	29·710
28. 8. 50	30·060	31. 15. 55	29·730
June		June	
1. 22. 45	29·988	3. 15. 25	29·762
7. 7. 5	30·326	9. 12. 25	29·712
11. 0. 15	29·860	13. 0. 55	29·645
15. 23. 20	30·054	18. 7. 55	29·373
18. 23. 15	29·580	19. 15. 35	29·441
21. 14. 30	29·909	24. 6. 30	29·266
28. 9. 15	30·105		
July		July	
4. 8. 35	30·291	1. 4. 30	29·494
11. 6. 30	30·370	6. 19. 5	30·035
21. 9. 35	30·061	18. 4. 45	29·549
28. 21. 30	29·856	26. 5. 55	29·666
29. 19. 45	29·736	29. 18. 35	29·649
		29. 23. 10	29·666
August		August	
2. 9. 40	30·015	5. 15. 40	29·636
7. 23. 25	30·082	9. 17. 35	29·847
10. 22. 15	29·956	12. 14. 50	29·802
17. 2. 30	30·013	21. 6. 20	29·393
24. 0. 15	29·722	24. 16. 45	29·606
26. 10. 25	29·852	28. 19. 20	29·741
31. 7. 45	30·098		
September		September	
4. 10. 0	30·158	2. 15. 35	29·883
6. 9. 50	30·101	5. 3. 25	29·966
10. 9. 45	29·995	9. 2. 0	29·758
18. 1. 0	30·197	12. 17. 45	29·680
22. 21. 10	29·709	21. 5. 15	29·220
25. 9. 0	29·956	24. 4. 20	29·575
27. 9. 15	30·055	26. 0. 55	29·788
29. 12. 0	30·066	28. 0. 10	29·933
		30. 10. 35	29·474

MAXIMA. Greenwich Civil Time, 1911.	MAXIMA. Reading.	MINIMA. Greenwich Civil Time, 1911.	MINIMA. Reading.
October		October	
d h m	in.	d h m	in.
1. 21. 20	30·078	3. 4. 55	29·618
6. 19. 25	29·937	7. 14. 45	29·659
10. 23. 20	30·366	14. 3. 30	29·775
15. 9. 0	30·073	20. 10. 10	29·539
20. 19. 0	29·741	22. 10. 20	28·833
23. 21. 0	29·503	24. 21. 50	29·090
26. 1. 15	29·211	26. 14. 35	28·812
27. 2. 5	28·974	27. 12. 0	28·896
29. 10. 25	30·095	30. 16. 35	29·556
31. 10. 10	29·900	31. 15. 10	29·829
November		November	
1. 10. 40	30·010	2. 15. 20	29·768
3. 7. 45	29·859	4. 2. 25	29·580
4. 12. 20	29·730	5. 5. 15	29·221
7. 4. 20	29·823	9. 6. 35	29·321
11. 10. 15	29·653	12. 5. 40	29·088
14. 9. 25	30·146	16. 1. 0	29·305
16. 8. 10	29·397	18. 16. 5	28·467
21. 1. 0	29·442	22. 6. 10	29·227
25. 16. 40	29·817	27. 6. 10	29·664
29. 22. 30	30·262		
December		December	
4. 17. 10	29·766	3. 13. 50	29·642
6. 11. 30	29·931	5. 9. 30	29·364
8. 3. 5	29·626	7. 13. 5	29·228
9. 21. 20	29·523	9. 1. 10	29·056
12. 20. 40	29·527	11. 1. 55	28·778
13. 21. 30	29·371	13. 14. 5	29·286
14. 18. 0	29·533	14. 5. 0	29·276
17. 22. 50	29·798	15. 10. 40	29·167
19. 16. 30	29·627	19. 5. 10	29·515
20. 22. 55	29·443	20. 12. 20	28·942
22. 3. 30	29·662	21. 11. 0	28·878
23. 14. 50	29·990	22. 20. 30	29·020
26. 9. 5	29·630	25. 6. 10	29·155
		26. 19. 5	29·296

The readings in the above table are accurate, but the times are occasionally liable to uncertainty, as the barometer will sometimes remain at its extreme reading without sensible change for a considerable interval of time. In such cases the time given is the middle of the stationary period.
The time is expressed in civil reckoning, commencing at midnight and counting from 0^h to 24^h.
The height of the barometer cistern above mean sea level is 159 feet: no correction has been applied to the readings to reduce to sea level.

HIGHEST and LOWEST READINGS of the BAROMETER in each Month for the YEAR 1911.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
Highest	30·597	30·610	30·205	30·288	30·112	30·326	30·370	30·098	30·197	30·366	30·262	30·246
Lowest	29·196	29·072	29·086	29·171	29·423	29·266	29·494	29·393	29·220	28·812	28·467	28·778
Range	1·401	1·538	1·119	1·117	0·689	1·060	0·876	0·705	0·977	1·554	1·795	1·468

The highest reading in the year was 30^{in}·610 on February 2. The lowest reading in the year was 28^{in}·467 on November 18.
The range of reading in the year was 2^{in}·143.

MONTHLY RESULTS of METEOROLOGICAL ELEMENTS for the YEAR 1911.

MONTH, 1911.	Mean Reading of the Barometer.	TEMPERATURE OF THE AIR. Highest.	Lowest.	Range in the Month.	Mean of all the Highest.	Mean of all the Lowest.	Mean of the Daily Ranges.	Monthly Mean.	Excess of Mean above Average of 65 Years.	Mean Temperature of Evaporation.	Mean Temperature of the Dew Point.	Mean Degree of Humidity. (Saturation = 100.)
	in.	°	°	°	°	°	°	°	°	°	°	
January	30·136	51·7	24·1	27·6	42·0	34·2	7·8	38·2	− 0·4	36·8	34·7	87·5
February	30·006	55·2	21·6	33·6	46·0	35·3	10·7	41·2	+ 1·6	38·8	35·7	81·3
March	29·727	61·8	29·1	32·7	48·4	35·8	12·6	41·9	0·0	39·8	37·1	83·5
April	29·836	67·3	26·7	40·6	55·3	38·6	16·8	46·3	− 1·0	42·4	38·1	73·8
May	29·805	81·7	35·0	46·7	68·1	46·3	21·8	56·1	+ 3·1	52·0	48·2	75·2
June	29·821	83·9	40·6	43·3	70·9	50·3	20·7	59·6	+ 0·2	54·5	49·9	70·6
July	29·981	95·6	45·8	49·8	81·1	55·0	26·1	67·3	+ 4·7	59·6	53·6	61·8
August	29·836	100·0	48·1	51·9	81·1	57·0	24·1	67·5	+ 5·8	61·2	56·3	68·1
September	29·883	94·1	37·7	56·4	72·1	47·9	24·2	60·3	+ 3·0	54·3	49·1	67·6
October	29·732	67·6	28·1	39·5	57·4	43·9	13·5	50·5	+ 0·5	48·3	46·0	85·1
November	29·559	59·0	28·3	30·7	49·2	38·4	10·8	44·2	+ 0·7	42·0	39·3	83·6
December	29·573	53·9	28·9	25·0	48·6	39·7	8·9	44·5	+ 4·6	43·0	41·3	89·0
Means	29·825	Highest 100·0	Lowest 21·6	Annual Range 78·4	60·0	43·5	16·5	51·5	+ 1·9	47·7	44·1	77·3

MONTH, 1911.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a Cubic Foot of Air.	Mean Weight of a Cubic Foot of Air.	Mean Temperature at Noon of the Earth 3ft. 2in. below the surface of the Soil.	Mean Amount of Cloud. (0–10.)	RAIN. Number of Rainy Days.	Amount collected in Gauge No. 6, whose receiving Surface is 5 inches above the Ground.	WIND. From Osler's Anemometer. Number of Hours of Prevalence of each Wind referred to different Points of Azimuth. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Number of Calm or nearly Calm Hours.	Mean Daily Pressure on the Square Foot.	From Robinson's Anemometer. Mean Daily Horizontal Movement of the Air.
	in.	grs.	grs.	°			in.	h	h	h	h	h	h	h	h	h	lbs.	miles.
January	0·201	2·3	561	42·76	7·9	12	1·233	60	104	65	26	11	158	174	34	112	0·24	284
February	0·209	2·4	555	41·67	7·8	16	1·376	94	47	9	18	32	186	155	61	70	0·54	384
March	0·221	2·6	549	43·19	7·9	15	1·655	109	165	129	31	16	126	98	47	23	0·40	348
April	0·230	2·7	546	44·70	7·1	12	1·734	110	165	28	2	18	223	132	15	27	0·53	386
May	0·338	3·8	535	51·66	6·2	8	1·876	92	152	90	44	18	149	83	12	104	0·15	225
June	0·360	4·0	531	58·60	6·5	12	2·096	49	86	90	38	31	219	127	36	44	0·28	291
July	0·412	4·5	526	62·71	4·3	4	0·268	66	119	104	9	50	156	121	34	85	0·17	247
August	0·454	5·0	523	66·37	5·1	8	1·343	51	108	74	49	40	246	121	8	47	0·13	243
September	0·349	3·9	532	62·78	4·7	10	1·336	94	76	22	41	60	174	115	45	93	0·16	235
October	0·311	3·5	539	55·96	7·0	17	3·299	80	135	132	43	51	147	68	14	74	0·29	288
November	0·240	2·8	543	50·05	7·8	21	3·422	42	70	38	25	116	270	97	26	36	0·55	387
December	0·260	2·9	543	46·35	7·2	23	4·020	25	3	2	40	198	300	143	12	21	0·41	358
Sums	...	...	...	...	...	158	23·658	872	1230	783	366	641	2354	1434	344	736	...	...
Means	0·299	3·4	540	52·23	6·6	...	...	...	...	...	...	...	...	...	...	...	0·32	306

The greatest recorded pressure of the wind on the square foot in the year was 20·5 lbs. on January 12.
The greatest recorded daily horizontal movement of the air in the year was 817 miles on November 5.
The least recorded daily horizontal movement of the air in the year was 77 miles on October 13.

MONTHLY MEAN READING of the BAROMETER at every HOUR of the DAY, as deduced from the PHOTOGRAPHIC RECORDS.

Hour, Greenwich Civil Time.	1911. January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Yearly Means.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in	in.
Midnight	30·139	30·042	29·727	29·846	29·812	29·835	29·988	29·842	29·892	29·743	29·561	29·587	29·835
1h	30·133	30·033	29·726	29·841	29·810	29·830	29·987	29·842	29·889	29·743	29·556	29·582	29·831
2	30·131	30·027	29·719	29·836	29·806	29·823	29·984	29·840	29·883	29·738	29·551	29·579	29·826
3	30·128	30·013	29·711	29·834	29·804	29·819	29·982	29·838	29·877	29·734	29·546	29·573	29·822
4	30·121	30·002	29·707	29·830	29·804	29·817	29·981	29·836	29·874	29·732	29·539	29·565	29·817
5	30·119	29·998	29·709	29·831	29·809	29·819	29·984	29·839	29·875	29·732	29·538	29·558	29·818
6	30·122	29·997	29·713	29·836	29·813	29·822	29·986	29·843	29·878	29·733	29·540	29·557	29·820
7	30·128	29·997	29·720	29·842	29·819	29·824	29·990	29·846	29·883	29·738	29·548	29·558	29·824
8	30·136	30·006	29·727	29·845	29·822	29·827	29·992	29·850	29·892	29·742	29·558	29·561	29·830
9	30·143	30·011	29·731	29·848	29·822	29·826	29·990	29·851	29·893	29·742	29·562	29·564	29·832
10	30·149	30·012	29·733	29·848	29·818	29·828	29·988	29·848	29·897	29·739	29·566	29·568	29·833
11	30·150	30·014	29·735	29·845	29·812	29·826	29·986	29·841	29·895	29·736	29·565	29·563	29·831
Noon	30·140	30·008	29·733	29·838	29·806	29·822	29·981	29·835	29·893	29·728	29·558	29·554	29·825
13h	30·131	29·996	29·728	29·833	29·802	29·819	29·977	29·831	29·887	29·719	29·556	29·553	29·819
14	30·127	29·988	29·723	29·827	29·796	29·816	29·972	29·826	29·880	29·712	29·551	29·560	29·815
15	30·125	29·986	29·720	29·821	29·790	29·811	29·968	29·820	29·872	29·708	29·551	29·569	29·812
16	30·127	29·985	29·718	29·818	29·786	29·807	29·962	29·817	29·867	29·709	29·555	29·577	29·811
17	30·134	29·989	29·721	29·818	29·784	29·805	29·960	29·815	29·868	29·715	29·561	29·581	29·813
18	30·138	29·998	29·728	29·821	29·786	29·807	29·963	29·816	29·870	29·725	29·572	29·583	29·817
19	30·144	30·004	29·736	29·830	29·791	29·811	29·967	29·821	29·877	29·732	29·574	29·585	29·823
20	30·147	30·006	29·740	29·841	29·799	29·817	29·978	29·832	29·886	29·736	29·576	29·588	29·829
21	30·150	30·008	29·746	29·844	29·807	29·828	29·991	29·840	29·891	29·742	29·577	29·590	29·834
22	30·151	30·008	29·746	29·845	29·813	29·830	29·996	29·844	29·891	29·742	29·573	29·593	29·836
23	30·152	30·005	29·742	29·845	29·815	29·830	29·998	29·848	29·890	29·742	29·571	29·594	29·836
24	30·150	30·003	29·738	29·845	29·815	29·826	29·997	29·847	29·888	29·744	29·567	29·592	29·834
Means 0h.–23h.	30·136	30·006	29·727	29·836	29·805	29·821	29·981	29·836	29·883	29·732	29·559	29·573	29·825
Means 1h.–24h.	30·137	30·004	29·727	29·836	29·805	29·820	29·982	29·836	29·883	29·732	29·559	29·573	29·825
Number of Days employed.	31	28	31	30	31	30	31	31	30	31	30	31	...

MONTHLY MEAN TEMPERATURE of the AIR at every HOUR of the DAY, as deduced from the PHOTOGRAPHIC RECORDS.

Hour, Greenwich Civil Time.	1911. January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Yearly Means.
	°	°	°	°	°	°	°	°	°	°	°	°	°
Midnight	37·8	39·6	40·0	42·8	50·7	54·1	59·7	61·7	55·6	48·5	43·1	43·8	48·1
1h	37·6	39·2	39·6	42·1	50·0	53·7	58·7	61·0	54·8	48·2	42·9	43·7	47·6
2	37·3	38·9	39·5	41·7	49·5	53·3	58·2	60·5	54·1	48·0	42·8	43·6	47·3
3	37·1	38·7	39·3	41·5	49·0	53·1	57·8	59·9	53·8	47·7	42·7	43·5	47·0
4	36·9	38·8	39·2	41·2	48·5	52·9	57·3	59·4	53·5	47·6	42·6	43·4	46·8
5	36·9	38·9	39·0	41·2	48·6	53·3	57·6	59·3	53·4	47·3	42·8	43·6	46·8
6	36·9	38·8	38·7	41·5	49·7	54·7	59·4	60·1	53·5	47·4	42·8	43·3	47·2
7	36·9	38·8	38·9	42·9	51·5	56·7	62·3	62·3	55·0	47·6	42·7	43·4	48·3
8	37·1	38·9	39·7	44·7	54·5	59·6	66·1	65·4	58·1	48·4	42·9	43·6	49·9
9	37·4	40·0	41·3	46·5	57·4	62·0	70·0	68·8	62·0	50·1	44·1	44·0	52·0
10	38·3	41·2	43·0	47·8	59·9	64·0	72·4	71·9	64·7	51·9	45·5	44·8	53·8
11	39·3	42·7	44·3	49·7	62·2	65·1	74·6	74·2	67·1	53·6	46·4	45·8	55·4
Noon	40·0	43·8	45·9	50·8	63·6	66·2	76·2	76·1	67·9	54·7	47·3	46·5	56·6
13h	40·6	44·5	46·4	52·3	64·4	66·6	77·6	77·0	69·0	55·4	47·3	46·9	57·3
14	40·6	44·7	46·6	52·8	64·8	66·9	78·5	77·6	69·5	55·6	47·3	46·7	57·6
15	40·5	44·6	46·2	52·9	64·2	66·7	78·5	76·8	69·3	55·4	46·8	46·2	57·3
16	39·9	44·2	45·8	52·3	63·3	66·0	77·4	75·6	67·9	54·4	45·8	45·5	56·5
17	39·2	43·4	44·6	50·9	62·1	64·7	75·4	74·0	65·8	52·9	44·9	44·7	55·2
18	38·6	42·6	43·5	49·3	60·5	63·4	73·1	71·5	63·2	51·6	44·2	44·4	53·8
19	38·2	42·1	42·4	47·4	58·4	61·3	70·5	68·9	60·7	50·5	43·7	44·3	52·4
20	37·9	41·6	41·4	46·2	56·0	58·9	66·9	66·6	58·7	49·6	43·6	44·1	51·0
21	37·7	41·1	40·8	45·0	54·2	57·1	64·2	64·7	56·9	49·0	43·2	44·1	49·8
22	37·5	40·8	40·4	44·2	53·0	55·8	62·4	63·4	56·1	48·8	43·1	44·1	49·1
23	37·5	40·4	40·2	43·4	52·0	54·8	60·9	62·4	55·7	48·6	43·0	44·1	48·6
24	37·4	40·2	39·9	42·9	51·1	54·1	59·9	61·5	55·2	48·5	43·1	43·9	48·1
Means 0h.–23h.	38·2	41·2	41·9	46·3	56·2	59·6	67·3	67·5	60·3	50·5	44·2	44·5	51·5
Means 1h.–24h.	38·2	41·2	41·9	46·3	56·2	59·6	67·3	67·4	60·2	50·5	44·2	44·5	51·5
Number of Days employed.	31	28	31	30	31	30	31	31	30	31	30	31	...

MONTHLY MEAN TEMPERATURE of EVAPORATION at every HOUR of the DAY, as deduced from the PHOTOGRAPHIC RECORDS.

Hour, Greenwich Civil Time.	1911.												Yearly Means.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
	°	°	°	°	°	°	°	°	°	°	°	°	°
Midnight	36·4	37·9	38·6	40·7	49·0	52·1	56·4	59·0	52·6	47·3	41·2	42·5	46·1
1h	36·3	37·7	38·4	40·3	48·5	51·6	55·9	58·6	52·1	47·1	41·2	42·4	45·8
2	36·1	37·6	38·3	40·2	48·0	51·4	55·6	58·4	51·7	46·9	41·0	42·3	45·6
3	35·9	37·4	38·1	40·1	47·8	51·2	55·3	58·0	51·5	46·5	41·1	42·5	45·4
4	35·8	37·4	37·9	39·9	47·4	51·0	55·1	57·6	51·2	46·4	41·1	42·5	45·3
5	35·8	37·4	37·8	39·9	47·5	51·4	55·2	57·5	51·2	46·3	41·2	42·5	45·3
6	35·8	37·2	37·6	40·0	48·3	52·1	56·3	58·0	51·4	46·4	41·2	42·2	45·5
7	35·8	37·2	37·7	40·8	49·6	53·2	57·9	59·3	52·3	46·2	40·9	42·2	46·1
8	35·9	37·3	38·4	41·8	51·4	54·8	59·6	60·9	54·1	46·9	41·2	42·4	47·1
9	36·2	38·0	39·4	42·9	53·1	56·0	61·1	62·4	55·9	48·2	41·9	42·8	48·2
10	36·8	38·8	40·5	43·5	54·1	56·7	62·0	63·5	56·8	49·2	42·8	43·3	49·0
11	37·6	39·8	41·4	44·2	55·6	57·2	62·9	64·1	57·3	50·1	43·5	44·2	49·8
Noon	38·2	40·4	42·3	44·6	56·1	57·4	63·4	64·5	57·0	50·7	43·9	44·6	50·3
13h	38·6	40·8	42·6	45·3	56·3	57·6	64·0	64·8	57·5	51·1	43·9	44·6	50·6
14	38·6	40·8	42·4	45·4	56·4	57·6	64·3	64·8	57·5	51·2	43·7	44·5	50·6
15	38·5	40·7	42·2	45·6	56·1	57·6	64·1	64·6	57·3	51·0	43·5	44·0	50·4
16	38·1	40·5	41·9	45·2	55·7	57·2	63·4	64·1	56·7	50·6	43·0	43·5	50·0
17	37·6	40·0	41·3	44·7	55·0	56·6	62·6	63·6	55·9	49·9	42·5	43·0	49·4
18	37·1	39·6	40·7	44·1	54·5	56·0	61·8	62·9	55·1	49·1	42·0	42·9	48·8
19	36·9	39·4	40·3	43·2	53·7	55·2	60·7	62·1	54·5	48·5	41·6	42·8	48·2
20	36·5	39·1	39·6	42·5	52·3	54·3	59·5	61·2	53·9	48·1	41·6	42·8	47·6
21	36·3	38·8	39·2	41·8	51·3	53·5	58·5	60·4	53·1	47·7	41·4	42·8	47·1
22	36·1	38·7	39·0	41·5	50·7	52·9	57·7	59·9	52·7	47·6	41·3	42·7	46·7
23	36·1	38·5	38·9	41·1	49·9	52·4	57·1	59·3	52·5	47·5	41·3	42·7	46·4
24	36·1	38·5	38·6	40·8	49·3	52·1	56·5	58·8	52·2	47·3	41·2	42·5	46·2
Means $0^h.-23^h.$	36·8	38·8	39·8	42·5	52·0	54·5	59·6	61·2	54·2	48·4	42·0	43·0	47·7
Means $1^h.-24^h.$	36·8	38·8	39·8	42·5	52·0	54·5	59·6	61·2	54·2	48·4	42·0	43·0	47·7
Number of Days employed.	31	28	31	30	31	30	31	31	30	31	30	31	...

MONTHLY MEAN TEMPERATURE of the DEW POINT at every HOUR of the DAY, as deduced by GLAISHER'S TABLES from the corresponding AIR and EVAPORATION TEMPERATURES.

Hour, Greenwich Civil Time.	1911.												Yearly Means.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
	°	°	°	°	°	°	°	°	°	°	°	°	°
Midnight	34·5	35·7	36·8	38·2	47·2	50·1	53·5	56·7	49·8	46·0	38·9	40·9	44·0
1h	34·5	35·8	36·8	38·1	46·9	49·6	53·4	56·5	49·5	45·9	39·2	40·8	43·9
2	34·4	35·9	36·7	38·3	46·4	49·5	53·3	56·6	49·3	45·7	38·8	40·7	43·8
3	34·2	35·7	36·5	38·3	46·5	49·3	53·1	56·4	49·3	45·2	39·2	41·3	43·7
4	34·3	35·5	36·2	38·2	46·2	49·1	53·1	56·0	49·0	45·1	39·3	41·4	43·6
5	34·3	35·4	36·2	38·2	46·3	49·5	53·0	55·9	49·0	45·2	39·3	41·2	43·6
6	34·3	35·0	36·1	38·1	46·8	49·6	53·5	56·1	49·3	45·3	39·3	40·9	43·7
7	34·3	35·0	36·1	38·3	47·7	50·0	54·2	56·7	49·7	44·7	38·8	40·8	43·9
8	34·2	35·2	36·7	38·4	48·4	50·5	54·3	57·2	50·5	45·3	39·2	41·0	44·2
9	34·6	35·4	37·0	38·9	49·2	50·8	54·2	57·4	50·6	46·2	39·3	41·4	44·6
10	34·8	35·8	37·5	38·7	49·0	50·7	54·3	57·2	50·3	46·5	39·7	41·6	44·7
11	35·4	36·3	38·0	38·3	49·9	50·7	54·5	56·8	49·5	46·7	40·2	42·4	44·9
Noon	35·9	36·4	38·2	38·1	49·9	50·3	54·4	56·3	48·4	46·9	40·1	42·5	44·8
13h	36·1	36·5	38·3	38·2	49·6	50·4	54·5	56·3	48·5	47·0	40·1	42·0	44·8
14	36·1	36·3	37·7	38·0	49·5	50·2	54·5	55·9	48·2	47·0	39·7	42·0	44·6
15	36·0	36·2	37·6	38·3	49·4	50·3	54·2	56·0	48·0	46·8	39·8	41·5	44·5
16	35·8	36·2	37·4	38·0	49·3	50·1	53·6	55·9	47·8	46·9	39·8	41·2	44·3
17	35·5	36·0	37·5	38·3	48·9	49·9	53·4	56·0	47·9	47·0	39·7	41·0	44·3
18	35·1	36·0	37·4	38·5	49·2	49·8	53·5	56·4	48·3	46·6	39·4	41·1	44·3
19	35·1	36·1	37·7	38·5	49·5	49·9	53·1	56·8	49·1	46·4	39·2	41·0	44·4
20	34·6	36·0	37·3	38·3	48·8	50·2	53·6	56·9	49·6	46·5	39·3	41·2	44·4
21	34·4	35·9	37·2	38·1	48·5	50·2	53·7	56·9	49·6	46·3	39·3	41·3	44·3
22	34·2	36·0	37·2	38·3	48·4	50·2	53·7	57·0	49·5	46·3	39·2	41·0	44·3
23	34·2	36·1	37·2	38·4	47·8	50·1	53·9	56·7	49·5	46·3	39·3	41·0	44·2
24	34·3	36·3	36·9	38·4	47·4	50·1	53·5	56·5	49·3	46·0	38·9	40·8	44·0
Means $0^h.-23^h.$	34·9	35·8	37·1	38·3	48·3	50·0	53·8	56·5	49·2	46·2	39·4	41·3	44·2
Means $1^h.-24^h.$	34·9	35·9	37·1	38·3	48·3	50·0	53·8	56·5	49·2	46·2	39·4	41·3	44·2

MONTHLY MEAN DEGREE of HUMIDITY (Saturation = 100) at every HOUR of the DAY, as deduced by GLAISHER'S TABLES from the corresponding AIR and EVAPORATION TEMPERATURES.

Hour, Greenwich Civil Time.	1911. January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Yearly Means.
Midnight	88	86	89	84	88	86	81	84	82	92	85	90	86
1^h	89	88	90	86	89	86	83	86	82	92	86	90	87
2	89	90	90	89	90	87	84	87	84	92	86	90	88
3	89	90	90	89	92	87	84	89	85	92	87	92	89
4	91	89	90	90	92	88	86	89	84	92	88	93	89
5	91	88	90	90	92	87	85	89	85	93	87	91	89
6	91	87	91	88	90	82	82	87	86	93	87	91	88
7	91	87	91	84	87	78	75	82	83	90	86	90	85
8	90	87	90	78	79	72	66	76	76	89	86	90	82
9	90	84	85	75	74	67	57	66	67	87	83	90	77
10	88	82	81	72	67	62	53	60	59	82	81	89	73
11	86	79	78	65	64	59	50	55	53	77	80	88	69
Noon	86	75	75	62	61	57	47	50	48	75	77	87	67
13^h	85	73	74	59	59	57	46	49	48	74	77	84	65
14	85	72	72	58	57	56	43	48	47	73	76	85	64
15	85	72	73	58	59	56	43	48	47	73	78	85	65
16	86	73	73	59	61	57	44	50	48	76	80	85	66
17	87	75	75	62	62	59	47	54	52	81	83	87	69
18	88	78	79	66	67	61	50	59	59	83	83	89	72
19	89	80	84	72	72	67	54	64	66	86	84	89	76
20	88	81	86	75	77	73	62	72	72	90	85	90	79
21	88	82	87	77	81	77	69	76	76	91	86	90	82
22	88	84	89	79	84	82	74	80	79	92	86	89	84
23	88	85	90	82	85	84	78	82	81	92	86	89	85
24	89	87	90	84	87	86	80	84	81	92	85	89	86
Means $0^h.-23^h.$	88	82	84	75	76	72	64	70	69	86	83	89	78
Means $1^h.-24^h.$	88	82	84	75	76	72	64	70	69	86	83	89	78

TOTAL AMOUNT of SUNSHINE registered in each HOUR of the DAY in each MONTH, as derived from the RECORDS of the CAMPBELL-STOKES SELF-REGISTERING INSTRUMENT for the YEAR 1911.

Month, 1911.	Registered Duration of Sunshine in the Hour ending 5^h.	6^h.	7^h.	8^h.	9^h.	10^h.	11^h.	Noon.	13^h.	14^h.	15^h.	16^h.	17^h.	18^h.	19^h.	20^h.	Total registered Duration of Sunshine in each Month.	Corresponding aggregate Period during which the Sun was above the Horizon.	Proportion of Sunshine.	Mean Altitude of the Sun at Noon.
	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h		°
January	...	...	...	0·1	2·0	4·0	5·5	3·9	5·6	5·6	3·8	2·4	...	...	...	...	32·9	258·6	0·127	18
February	...	...	...	1·8	4·7	6·3	9·1	8·8	9·0	9·2	8·4	5·4	1·4	...	...	...	64·1	276·5	0·232	26
March	...	...	1·4	3·8	7·3	9·8	8·2	8·6	8·1	8·0	8·1	7·8	4·4	0·5	...	...	76·0	365·3	0·208	37
April	...	1·4	4·9	8·9	11·4	10·4	14·1	15·8	17·2	14·5	13·4	15·2	12·5	10·0	1·0	...	150·7	412·7	0·365	48
May	1·0	10·8	14·0	14·9	16·4	17·1	19·0	19·4	18·2	18·2	17·1	13·6	15·4	14·0	9·5	1·9	220·5	480·8	0·459	57
June	3·3	10·8	14·3	15·5	14·8	16·1	17·4	17·5	16·8	16·3	16·1	17·1	16·2	16·0	12·7	3·7	224·6	494·3	0·454	62
July	5·5	17·5	20·6	21·6	23·8	24·2	24·1	23·7	25·8	27·0	25·9	24·4	23·5	20·6	19·7	6·4	334·3	498·2	0·671	60
August	1·0	7·1	15·2	18·1	20·6	22·1	23·2	22·8	22·9	22·3	19·8	18·8	18·9	16·2	10·9	...	259·9	451·2	0·576	52
September	...	1·0	12·1	19·8	22·7	22·1	24·2	23·1	22·0	20·6	20·3	20·0	15·9	9·5	0·6	...	233·9	379·6	0·616	41
October	...	...	...	4·1	7·4	10·3	12·3	11·1	12·7	11·7	10·8	10·6	5·6	...	...	...	96·6	331·0	0·292	30
November	...	...	...	0·7	5·4	8·5	7·7	8·6	7·0	7·1	4·8	4·2	0·5	...	...	...	54·5	266·4	0·205	20
December	...	...	...	...	1·5	5·5	7·1	6·1	6·2	6·9	6·6	1·2	...	...	...	...	41·1	244·3	0·168	16
For the Year	10·8	48·6	82·5	109·3	138·0	156·4	171·9	169·4	171·5	167·4	155·1	140·7	114·3	86·8	54·4	12·0	1789·1	4458·9	0·401	...

The hours are reckoned from *apparent* midnight.

READINGS of THERMOMETERS on the ORDINARY STAND in the MAGNETIC PAVILION ENCLOSURE, in the YEAR 1911.

(The readings of the maximum and minimum thermometers apply to the twenty-four hours ending at 21h.)

JANUARY.

Days of the Month.	Dry-Bulb Thermometers, 4 ft. above the Ground. Maximum.	Minimum.	9h	Noon.	15h	21h	Wet-Bulb Thermometer, 4 ft. above the Ground. 9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°
1	45·6	34·3	42·8	44·5	41·0	34·5	41·6	43·8	37·2	31·3
2	37·8	32·6	35·1	36·8	36·6	36·6	32·2	34·0	34·9	34·9
3	40·2	32·2	34·6	38·4	38·4	36·6	34·3	35·8	35·6	33·8
4	40·5	36·1	38·5	40·1	39·8	37·4	37·1	38·5	38·3	35·9
5	39·0	35·3	36·2	37·6	38·6	37·5	35·6	36·8	37·8	36·9
6	42·0	36·0	38·7	41·5	39·6	40·7	37·8	39·0	38·8	39·0
7	41·0	31·9	32·6	36·6	38·6	32·6	31·8	34·8	36·7	31·8
8	49·0	32·2	45·5	47·6	48·6	48·6	45·4	47·4	47·8	48·0
9	50·0	40·3	48·5	49·5	49·6	40·8	47·8	48·8	49·0	38·1
10	42·5	34·9	36·8	39·9	41·1	37·0	35·3	37·7	38·8	35·7
11	44·3	35·9	41·6	42·9	43·6	43·8	40·0	41·2	42·0	43·0
12	44·7	33·1	38·6	39·5	37·6	33·6	35·4	35·8	34·8	32·6
13	37·0	32·3	34·6	35·5	35·9	32·7	33·7	34·0	33·8	30·7
14	33·1	26·3	26·5	28·5	29·3	26·6	26·1	27·8	28·4	26·1
15	38·0	24·1	27·6	33·7	37·6	29·1	27·3	32·8	35·8	28·7
16	44·0	27·1	34·0	36·4	43·5	38·1	33·0	35·0	41·0	37·3
17	43·0	37·6	41·1	42·1	42·5	42·0	39·6	40·3	40·5	40·8
18	42·5	40·3	41·7	41·8	42·1	40·6	39·4	39·7	39·8	38·8
19	41·0	36·1	37·8	37·6	37·6	36·4	36·8	36·4	36·3	35·7
20	39·6	33·1	34·0	35·9	38·9	37·0	33·8	35·6	38·1	36·8
21	38·0	35·3	36·3	37·6	37·6	36·9	35·7	36·8	37·0	36·5
22	38·2	36·1	36·6	37·7	37·7	36·2	35·6	36·3	36·0	35·1
23	39·0	32·4	36·6	37·6	38·3	32·8	35·8	37·2	37·0	32·7
24	46·1	29·5	34·6	43·5	45·0	43·7	34·4	41·4	41·9	41·8
25	48·5	43·1	44·6	47·1	48·1	47·3	41·8	43·9	45·6	46·0
26	51·7	46·6	47·4	50·6	49·6	47·9	45·6	47·6	46·8	45·8
27	48·3	43·1	43·6	44·0	43·8	43·6	40·8	40·7	40·6	41·1
28	47·4	34·1	35·0	45·1	47·4	35·5	34·8	42·4	44·3	35·3
29	41·3	28·1	31·6	37·1	35·1	40·5	31·5	36·8	35·0	38·7
30	41·0	33·2	36·9	38·8	36·9	33·3	35·2	36·1	34·0	30·0
31	35·0	28·3	29·7	33·6	34·1	28·4	26·9	29·8	30·4	27·4
Means	42·2	34·2	37·4	40·0	40·5	37·7	36·2	38·2	38·5	36·3

FEBRUARY.

Days of the Month.	Dry-Bulb Thermometers, 4 ft. above the Ground. Maximum.	Minimum.	9h	Noon.	15h	21h	Wet-Bulb Thermometer, 4 ft. above the Ground. 9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°
1	37·0	21·6	24·8	34·6	36·3	29·3	24·4	31·7	33·2	28·3
2	34·7	22·6	26·8	32·0	33·2	34·6	26·3	30·8	31·5	32·8
3	41·2	32·2	38·6	40·6	41·1	39·7	37·4	39·3	39·8	38·6
4	43·0	37·2	39·2	41·7	42·5	40·6	37·8	39·7	40·3	38·7
5	42·1	38·0	38·9	40·8	41·7	39·6	37·7	38·8	39·2	38·5
6	39·8	35·3	37·0	38·4	37·6	35·7	34·6	35·0	34·5	33·7
7	36·6	32·8	34·6	34·9	35·9	36·4	33·3	33·8	33·4	33·4
8	40·1	34·1	37·2	39·5	38·8	37·1	34·8	36·6	35·8	35·3
9	38·8	33·3	35·6	37·9	37·5	34·8	33·0	34·4	33·8	31·8
10	43·5	25·1	32·0	41·2	41·6	38·6	30·6	36·9	37·0	36·8
11	44·9	35·2	35·9	41·1	42·6	37·3	34·7	37·7	37·6	34·7
12	44·5	29·1	33·1	39·6	42·8	40·6	32·0	37·4	38·8	35·8
13	42·0	30·1	35·6	40·7	41·0	32·9	34·0	38·1	37·3	31·6
14	46·0	26·3	34·2	43·6	45·5	39·8	31·5	38·3	40·5	37·4
15	48·1	33·7	44·4	47·5	46·1	33·7	43·2	39·8	39·8	32·6
16	50·0	32·9	46·1	48·6	49·5	48·2	44·3	46·2	46·1	45·9
17	55·0	47·6	49·6	52·8	53·7	51·1	46·1	47·7	48·0	47·7
18	55·2	49·2	50·7	52·6	53·7	51·7	49·1	50·2	51·6	49·2
19	52·0	39·1	42·6	47·2	48·1	39·7	40·8	41·7	41·8	35·8
20	48·0	33·1	37·4	46·5	46·6	41·1	35·8	40·1	40·7	38·3
21	48·4	35·1	41·0	45·6	45·7	48·3	39·8	43·4	44·2	47·3
22	52·0	43·6	48·6	48·9	50·8	44·2	43·9	42·5	43·4	41·7
23	52·0	43·0	46·2	47·6	49·4	48·4	43·3	46·8	47·0	44·6
24	51·0	42·8	44·9	48·7	49·8	43·7	40·4	42·5	41·9	40·8
25	55·0	41·2	50·2	52·4	54·0	47·5	48·0	50·4	50·7	43·5
26	48·9	41·0	43·5	46·6	47·4	41·6	38·7	39·8	39·2	37·8
27	48·2	34·3	40·5	43·6	44·2	48·2	39·4	42·1	43·7	47·8
28	52·0	46·9	49·6	50·5	51·6	46·9	48·5	49·1	49·9	44·7
Means	46·1	35·6	40·0	43·8	44·6	41·1	38·0	40·4	40·7	38·8

MARCH.

Days of the Month.	Dry-Bulb Thermometers, 4 ft. above the Ground. Maximum.	Minimum.	9h	Noon.	15h	21h	Wet-Bulb Thermometer, 4 ft. above the Ground. 9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°
1	51·3	37·2	41·5	49·4	48·6	44·4	38·2	43·1	41·9	41·2
2	59·3	43·8	49·7	55·9	57·6	50·6	47·9	51·5	52·3	48·7
3	53·6	48·0	50·6	51·8	53·2	49·1	48·3	48·3	47·7	46·8
4	50·4	41·0	48·2	48·5	49·6	41·0	45·1	44·8	45·0	39·9
5	46·0	32·6	38·5	44·7	44·8	34·9	35·8	40·7	40·0	33·9
6	46·7	32·6	40·8	45·7	41·9	40·6	38·2	41·3	39·7	40·0
7	45·9	39·1	41·0	45·5	43·2	40·2	39·8	42·3	41·1	38·6
8	48·1	29·7	37·1	44·7	46·6	41·1	36·2	39·9	41·6	39·7
9	47·9	39·6	41·7	44·2	45·4	41·1	41·0	40·6	40·4	36·8
10	51·0	29·1	41·5	46·7	47·6	43·8	38·8	41·2	42·8	39·8
11	44·8	40·1	41·6	43·8	44·4	41·2	40·6	41·8	42·8	40·2
12	47·1	30·7	40·8	45·5	44·6	37·5	38·0	41·4	40·8	36·8
13	43·0	33·0	36·0	38·6	41·3	36·7	32·5	34·8	36·9	34·8
14	43·2	33·3	36·9	41·4	41·6	38·6	33·5	36·7	36·8	34·8
15	40·4	33·2	33·8	35·3	38·9	37·9	32·8	34·8	37·2	36·8
16	45·3	34·6	39·6	43·8	42·9	37·6	37·5	39·1	38·0	36·0
17	46·0	29·1	35·9	44·5	38·5	37·6	34·6	40·7	36·9	36·8
18	45·0	37·2	41·1	43·9	40·7	39·8	38·6	40·7	39·3	39·6
19	43·0	39·1	39·7	41·6	41·8	39·6	38·9	39·9	40·1	38·6
20	51·5	37·1	44·9	50·1	48·5	39·2	42·6	45·8	43·2	37·6
21	61·8	37·2	43·5	54·7	58·5	45·6	42·7	50·6	51·8	43·8
22	60·0	37·2	43·6	57·6	57·9	46·4	43·4	52·2	51·6	44·8
23	49·5	40·1	45·5	48·7	44·6	40·1	44·9	47·7	44·0	39·7
24	47·3	37·6	41·5	44·6	44·7	37·6	39·0	39·8	39·6	35·8
25	42·0	33·2	36·8	38·9	38·7	34·9	33·8	34·7	32·9	32·8
26	44·0	33·3	36·8	38·8	43·8	37·6	33·3	35·0	38·1	34·9
27	39·7	35·6	37·6	39·1	39·2	35·7	37·3	37·8	37·2	34·9
28	53·1	33·1	43·8	50·0	51·7	39·9	40·2	44·4	46·0	39·2
29	51·0	39·6	41·8	46·6	50·4	42·9	41·8	45·3	47·8	42·6
30	47·2	39·6	41·4	44·8	46·7	45·9	41·3	44·0	45·4	45·3
31	56·0	44·1	47·5	54·2	54·6	45·3	46·2	50·3	48·9	44·8
Means	48·4	36·5	41·3	45·9	46·2	40·8	39·4	42·3	42·2	39·2

APRIL.

Days of the Month.	Dry-Bulb Thermometers, 4 ft. above the Ground. Maximum.	Minimum.	9h	Noon.	15h	21h	Wet-Bulb Thermometer, 4 ft. above the Ground. 9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°
1	53·2	41·5	45·3	49·2	51·1	45·4	43·6	46·3	47·3	44·0
2	45·5	39·3	40·6	41·3	41·5	41·3	39·8	40·1	40·7	39·1
3	46·3	35·8	39·0	41·9	45·3	36·2	35·8	35·8	37·0	32·8
4	44·8	32·1	37·7	36·6	41·1	34·6	35·2	34·9	37·0	33·4
5	36·1	27·2	32·3	34·6	29·9	27·8	30·3	30·8	28·4	26·8
6	38·0	26·7	33·4	34·6	35·1	33·9	29·5	30·1	30·9	31·4
7	43·0	30·6	35·6	39·2	38·5	34·4	34·6	35·9	33·8	31·7
8	50·6	32·2	41·4	45·9	49·5	39·1	39·2	41·1	44·0	37·8
9	48·2	35·6	42·6	44·6	47·6	43·4	40·1	42·8	43·8	40·8
10	45·2	38·1	40·6	43·6	42·5	40·9	37·8	38·8	38·9	37·8
11	50·5	39·2	44·5	47·6	48·6	40·0	40·8	42·9	42·9	37·7
12	57·7	30·3	42·6	51·6	56·9	50·5	39·3	44·6	46·8	44·8
13	55·3	39·6	43·6	49·5	54·5	39·8	39·9	42·9	45·8	37·8
14	63·0	31·2	47·7	59·6	62·4	49·0	43·8	51·2	53·6	46·7
15	66·9	39·5	53·4	61·6	65·6	50·7	47·1	50·6	51·6	47·3
16	58·3	39·9	51·0	55·7	57·3	46·0	46·5	46·8	48·7	42·4
17	65·0	37·4	53·4	58·6	61·0	46·4	47·4	50·1	50·7	43·2
18	65·0	40·3	53·4	62·6	60·4	57·6	49·8	54·1	52·2	49·8
19	59·0	45·6	53·2	55·5	56·6	46·1	46·4	46·2	47·8	42·0
20	59·0	42·6	51·4	52·7	56·6	47·7	45·6	42·9	44·8	43·0
21	59·5	42·1	50·0	52·6	56·0	51·6	45·9	49·4	52·2	49·3
22	67·3	47·0	54·1	64·6	63·3	51·6	48·8	49·2	51·1	46·3
23	63·0	50·1	55·7	59·1	59·6	52·6	51·8	52·8	52·8	47·3
24	66·0	44·6	52·1	59·7	63·8	53·6	47·0	49·7	51·8	46·8
25	60·9	44·4	53·5	57·9	57·3	49·6	48·5	50·3	49·8	47·8
26	59·5	47·1	49·0	53·7	58·9	47·2	47·8	45·4	46·8	41·3
27	60·0	42·0	48·7	54·7	58·2	50·5	47·4	52·4	51·8	47·0
28	62·0	48·1	51·6	55·5	60·9	48·6	47·6	47·8	49·1	46·7
29	55·1	42·0	48·0	46·6	50·3	45·4	43·6	44·0	45·5	44·3
30	58·0	42·0	48·6	52·5	56·6	47·4	45·3	46·8	48·9	45·7
Means	55·4	39·1	46·5	50·8	52·9	45·0	42·9	44·6	45·6	41·8

READINGS of THERMOMETERS on the ORDINARY STAND in the MAGNETIC PAVILION ENCLOSURE—*continued.*

(The readings of the maximum and minimum thermometers apply to the twenty-four hours ending at 21^h.)

Days of the Month.	Dry-Bulb Thermometers, 4 ft. above the Ground. Maximum.	Minimum.	9^h	Noon.	15^h	21^h	Wet-Bulb Thermometer, 4 ft. above the Ground. 9^h	Noon.	15^h	21^h
MAY.										
d	°	°	°	°	°	°	°	°	°	°
1	63.5	40.7	52.9	58.1	61.6	49.9	46.8	50.0	50.8	47.5
2	56.0	47.1	51.7	54.2	55.2	49.3	47.7	50.4	50.6	49.0
3	56.5	40.1	49.0	54.1	52.4	49.6	44.7	47.9	47.3	48.8
4	60.9	41.6	51.8	57.6	56.0	48.0	47.2	49.0	46.8	44.3
5	61.5	40.0	53.3	56.6	56.8	52.6	48.5	50.6	49.9	48.0
6	62.2	43.1	56.3	61.8	58.6	43.2	49.9	52.5	47.9	40.3
7	67.5	36.7	58.8	63.7	62.5	51.7	50.0	51.9	52.1	45.6
8	65.2	43.1	59.6	63.1	63.9	50.6	50.3	50.8	51.5	44.8
9	70.0	42.1	59.3	65.1	68.1	57.6	53.8	58.6	59.3	54.6
10	75.6	47.1	52.8	68.8	73.5	58.8	51.0	61.4	62.5	54.8
11	75.5	48.4	56.7	69.0	68.4	57.1	53.7	61.3	59.8	55.7
12	68.6	47.6	50.6	56.6	66.0	55.0	49.8	54.2	59.8	53.6
13	75.5	49.1	57.6	66.6	72.6	59.6	56.2	61.4	63.0	56.2
14	65.0	52.2	57.1	60.1	57.8	53.6	56.2	58.3	56.8	51.9
15	65.5	51.1	56.6	60.1	62.6	54.6	54.0	55.4	56.5	53.7
16	72.2	47.2	62.5	69.6	70.1	55.3	57.1	61.6	59.9	53.8
17	70.4	47.3	62.2	69.6	66.5	50.1	57.7	59.8	59.3	49.8
18	64.0	48.1	52.4	58.2	61.6	53.0	50.3	54.0	56.0	50.9
19	56.2	47.0	53.6	52.6	51.6	49.8	49.1	48.6	48.0	45.8
20	52.3	45.3	47.6	49.4	50.9	47.2	44.3	45.7	46.9	44.3
21	53.0	41.5	46.1	48.4	50.8	41.5	43.1	44.7	47.0	40.6
22	69.8	35.0	56.1	62.3	67.9	51.6	51.8	55.8	58.8	50.7
23	71.0	47.2	57.8	64.6	65.6	56.6	54.0	55.3	57.3	52.8
24	71.9	53.6	60.4	69.1	68.7	61.2	57.0	63.3	61.9	58.2
25	78.0	49.3	68.0	71.6	71.5	59.5	61.1	59.0	59.8	54.9
26	75.6	53.9	63.6	72.6	65.2	58.1	60.0	63.9	58.8	54.8
27	75.7	53.1	60.6	72.1	73.9	58.6	58.3	61.3	59.5	54.6
28	75.5	49.9	65.3	73.6	71.6	62.7	59.5	62.4	61.8	57.9
29	79.5	52.9	70.2	75.4	75.1	60.4	64.4	63.0	62.3	54.0
30	75.1	50.9	66.8	73.4	65.4	61.3	60.5	61.6	58.0	58.5
31	81.7	54.3	62.8	72.8	76.6	62.1	59.2	65.0	68.4	59.9
Means	68.1	46.7	57.4	63.6	64.2	54.2	53.1	56.1	56.1	51.3
JUNE.										
d	°	°	°	°	°	°	°	°	°	°
1	76.5	53.1	71.6	74.6	74.4	61.8	63.3	63.8	62.8	54.2
2	76.0	47.8	67.6	74.0	72.8	60.5	59.7	60.8	60.7	57.3
3	81.1	56.1	69.9	75.7	77.1	60.9	63.5	66.6	66.8	59.9
4	78.5	52.6	72.4	73.8	75.8	67.1	65.1	65.8	65.7	63.3
5	83.9	54.4	72.1	81.6	82.1	63.5	65.3	67.8	66.8	60.2
6	81.1	54.4	73.0	78.3	79.0	59.3	63.8	64.5	65.4	56.2
7	69.0	51.2	58.4	63.8	66.5	53.6	52.3	56.0	57.9	51.5
8	75.1	47.1	69.1	73.1	72.6	60.3	60.0	63.0	62.1	57.2
9	74.3	50.0	70.3	69.7	62.1	54.2	62.9	61.9	55.3	48.9
10	64.7	42.1	55.1	58.6	61.6	48.6	47.3	49.4	50.4	45.9
11	67.2	40.6	61.6	63.0	61.6	54.9	52.0	52.8	53.3	49.6
12	72.1	51.1	58.6	69.5	71.3	60.5	52.4	57.1	58.5	52.9
13	65.5	49.1	55.1	62.6	60.1	49.3	48.8	50.8	48.8	44.8
14	63.0	43.3	52.1	57.3	57.8	51.4	47.2	49.3	51.5	46.6
15	67.0	42.1	57.1	62.6	64.6	50.6	49.0	51.8	51.8	47.5
16	74.5	46.7	59.6	69.6	68.6	60.6	53.5	57.8	55.5	54.7
17	74.1	55.1	63.6	68.7	70.6	60.1	60.2	60.6	61.3	56.9
18	71.9	54.8	58.1	64.6	70.5	57.6	55.2	57.0	60.4	54.6
19	66.6	53.5	62.9	60.6	61.8	54.1	57.7	55.8	56.3	53.0
20	69.0	52.1	61.8	65.6	64.9	58.2	56.9	57.8	54.6	51.0
21	70.0	52.9	62.1	66.0	64.6	58.3	55.0	55.9	56.9	53.4
22	66.0	52.9	60.4	60.6	61.6	57.8	55.8	56.6	57.8	56.9
23	73.6	56.2	66.1	65.8	64.2	56.6	60.3	58.3	58.4	56.3
24	68.0	52.1	54.2	63.6	63.6	53.0	52.8	54.3	54.8	49.4
25	58.8	50.6	54.7	54.6	55.6	52.6	52.7	52.3	52.8	50.9
26	59.0	49.1	54.0	55.9	54.5	49.5	47.8	48.3	49.8	47.8
27	69.5	48.2	53.6	57.1	65.3	63.2	47.8	49.8	55.3	56.3
28	75.7	52.4	63.2	67.6	69.4	60.6	58.2	59.3	60.3	57.3
29	71.0	56.7	62.6	68.4	65.2	56.9	56.7	59.8	58.9	54.4
30	65.5	53.8	58.3	60.5	61.1	56.9	55.5	56.8	57.1	56.2
Means	70.9	50.7	62.0	66.2	66.7	57.1	56.0	57.4	57.6	53.5

Days of the Month.	Dry-Bulb Thermometers, 4 ft. above the Ground. Maximum.	Minimum.	9^h	Noon.	15^h	21^h	Wet-Bulb Thermometer, 4 ft. above the Ground. 9^h	Noon.	15^h	21^h
JULY.										
d	°	°	°	°	°	°	°	°	°	°
1	67.0	55.1	59.7	59.6	63.7	58.6	55.2	54.4	55.8	52.7
2	66.8	51.2	59.6	63.6	63.6	56.2	52.0	51.8	51.0	49.3
3	68.2	48.4	58.9	64.1	64.6	56.9	50.4	52.8	52.9	52.8
4	75.1	48.2	64.4	71.1	69.9	61.6	55.6	59.1	58.8	56.3
5	81.2	56.6	68.6	76.1	79.2	65.6	61.3	64.6	65.8	62.3
6	86.3	54.6	74.1	80.8	84.1	69.3	59.8	66.4	68.8	63.8
7	87.0	56.8	74.6	84.2	85.6	65.6	67.2	71.0	70.6	59.3
8	88.0	55.2	74.6	83.6	84.6	64.2	66.8	69.9	67.9	60.1
9	73.2	55.2	66.6	68.4	71.1	57.5	59.8	59.6	61.3	53.8
10	72.4	49.1	58.6	65.4	72.1	56.4	52.9	55.9	59.8	54.8
11	82.0	50.2	66.6	78.1	81.5	67.4	54.8	59.3	62.9	57.6
12	83.0	54.2	72.2	78.9	81.2	66.6	62.8	65.2	64.7	54.6
13	83.7	53.3	73.3	80.6	81.6	64.8	59.2	64.6	64.8	58.3
14	85.0	55.3	72.6	79.2	83.5	61.2	59.8	62.6	64.2	56.7
15	69.1	55.0	66.1	66.3	63.1	57.7	60.6	60.4	58.7	52.6
16	79.4	45.8	64.1	76.6	78.4	61.7	55.7	62.8	64.2	56.3
17	79.0	54.1	63.6	70.8	74.6	66.6	56.9	60.8	62.6	58.4
18	76.6	59.1	66.2	71.2	74.7	62.6	59.5	57.6	59.1	54.6
19	78.1	53.4	66.2	70.2	76.9	66.2	59.4	59.3	61.7	60.7
20	83.0	56.7	71.6	79.4	81.5	67.6	61.6	64.6	65.0	61.1
21	93.7	61.6	82.6	89.9	90.7	71.7	66.8	65.9	68.1	61.9
22	95.6	58.1	83.7	91.4	92.2	75.0	67.8	70.0	69.3	67.3
23	81.3	60.1	74.1	77.1	77.3	63.6	61.8	64.7	65.2	57.8
24	79.3	58.8	71.6	74.9	73.6	63.6	61.7	62.8	63.0	61.2
25	85.1	59.1	72.1	77.5	82.6	67.1	66.6	67.7	68.7	60.7
26	80.9	58.0	64.1	65.6	78.7	63.9	61.4	61.8	67.8	60.4
27	87.4	54.7	76.2	83.2	86.1	66.5	66.5	69.3	69.8	60.4
28	91.9	61.7	79.5	87.4	88.5	70.7	69.9	72.6	72.8	66.6
29	89.0	64.1	80.2	85.4	87.3	66.8	71.2	71.5	70.1	64.3
30	80.0	61.0	71.9	78.5	77.6	61.6	65.6	66.8	66.5	57.7
31	85.3	53.7	72.9	83.5	82.1	64.9	65.0	70.5	65.8	59.7
Means	81.1	55.4	70.0	76.2	78.5	64.2	61.1	63.4	64.1	58.5
AUGUST.										
d	°	°	°	°	°	°	°	°	°	°
1	86.2	55.5	71.6	81.5	76.5	64.2	64.3	68.2	66.7	61.7
2	83.2	56.6	68.1	78.2	79.6	61.7	63.3	66.5	67.6	59.4
3	76.3	58.0	69.7	75.3	71.6	63.6	63.8	64.5	64.9	58.8
4	80.2	55.3	69.2	75.4	76.8	64.8	59.8	61.1	62.1	59.7
5	79.0	59.4	69.8	73.6	74.6	65.2	62.8	62.4	63.5	61.5
6	79.5	54.6	68.4	74.6	74.6	63.7	59.7	61.0	62.3	60.3
7	84.2	59.0	72.4	79.9	84.2	66.3	63.8	65.7	67.3	62.2
8	89.1	55.6	77.5	86.0	86.6	69.7	64.6	68.2	70.2	65.8
9	100.0	61.2	83.7	95.6	97.7	74.9	72.0	72.1	71.4	64.8
10	85.5	62.9	72.1	79.4	83.6	65.6	64.5	68.3	68.8	59.0
11	87.0	60.1	65.1	76.5	85.5	68.3	62.4	68.0	70.3	65.2
12	89.7	59.0	73.6	83.6	87.9	72.9	66.8	70.5	68.8	65.4
13	90.9	62.9	78.6	89.4	88.9	71.7	70.8	70.4	67.1	62.7
14	87.9	60.6	78.0	84.7	83.9	65.0	67.7	67.4	65.8	59.8
15	77.7	56.1	66.0	74.0	74.3	62.0	59.8	62.3	61.1	55.4
16	76.4	53.1	60.9	69.9	75.5	61.1	53.3	57.3	60.5	57.5
17	85.9	51.3	66.0	78.8	81.3	68.5	61.2	65.8	66.4	58.9
18	86.0	60.3	69.6	80.7	80.0	72.8	61.7	64.4	65.2	64.1
19	84.4	58.4	64.6	77.2	77.8	63.9	60.5	66.0	66.3	62.8
20	82.2	57.1	71.0	79.5	79.2	66.1	65.1	68.6	67.4	63.2
21	73.0	62.1	62.3	67.9	69.7	64.1	61.1	64.5	65.4	64.1
22	67.3	59.1	63.1	65.1	66.1	59.4	61.3	61.6	61.4	57.4
23	71.3	54.4	60.6	65.9	68.1	59.3	58.2	59.4	60.1	57.8
24	76.1	54.1	69.1	73.1	66.1	60.7	62.5	62.8	61.8	59.5
25	76.0	53.1	66.0	68.6	66.6	60.8	60.8	61.3	60.5	56.9
26	77.2	52.7	66.6	71.0	71.0	63.6	58.8	59.8	60.6	59.3
27	75.9	62.2	69.2	69.3	72.4	65.2	65.3	65.5	65.0	61.4
28	78.8	58.1	69.3	70.0	66.1	62.0	62.9	64.2	64.0	61.1
29	75.9	55.6	65.6	69.8	72.2	62.7	59.7	60.1	59.0	55.7
30	74.7	54.3	61.6	72.7	69.0	55.7	57.0	60.4	59.4	55.7
31	76.0	48.1	62.6	71.5	73.6	60.0	57.6	60.1	61.0	55.3
Means	81.1	57.1	68.8	76.1	76.8	64.7	62.4	64.5	64.6	60.4

READINGS OF THERMOMETERS on the ORDINARY STAND in the MAGNETIC PAVILION ENCLOSURE—*concluded.*

(The readings of the maximum and minimum thermometers apply to the twenty-four hours ending at 21h.)

SEPTEMBER.

Days of the Month.	Dry-Bulb Thermometers, 4 ft. above the Ground.						Wet-Bulb Thermometer, 4 ft. above the Ground.			
	Maximum.	Minimum.	9h	Noon.	15h	21h	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°
1	79·5	49·2	65·8	76·0	79·0	61·1	58·7	61·6	62·9	55·1
2	89·1	51·3	78·8	87·7	88·7	68·3	66·3	64·8	68·0	64·2
3	78·0	59·2	67·0	71·7	73·6	62·6	59·7	60·2	61·7	59·0
4	74·0	52·1	67·6	72·3	72·8	60·1	60·4	63·0	62·7	57·1
5	80·3	54·7	61·5	72·2	79·6	60·4	59·3	61·9	60·4	54·8
6	86·3	50·1	69·1	80·6	85·3	66·5	60·3	62·9	65·9	61·1
7	91·6	52·3	69·6	85·0	89·6	64·8	62·7	65·3	64·8	59·0
8	94·1	52·1	76·9	91·8	92·1	69·6	64·3	68·3	68·5	61·1
9	65·9	58·9	64·2	65·1	64·2	58·9	61·3	60·3	58·1	53·4
10	72·1	47·2	66·6	70·5	69·3	60·0	59·3	60·4	59·8	56·4
11	83·0	49·1	73·1	80·2	80·3	59·6	59·0	60·3	58·8	52·0
12	88·5	51·7	74·9	84·9	83·2	70·4	62·1	66·0	64·4	63·8
13	71·0	56·1	61·3	60·7	61·6	56·4	59·9	58·4	58·9	56·0
14	63·1	53·8	57·8	60·2	61·3	54·0	54·5	55·0	53·5	51·0
15	62·7	45·6	55·9	58·8	60·8	51·1	51·0	50·8	51·6	48·5
16	65·1	45·4	56·8	62·2	61·8	52·1	50·6	53·8	51·4	49·4
17	62·1	45·1	54·6	59·4	61·3	47·5	50·1	50·8	51·7	46·3
18	69·4	40·3	55·2	63·2	68·6	55·1	50·3	54·8	57·3	51·7
19	69·3	46·1	59·1	65·3	67·3	56·5	52·1	54·2	56·5	54·7
20	67·6	54·8	62·7	63·6	62·6	54·9	57·8	57·8	58·3	49·9
21	63·0	45·6	53·0	57·5	58·6	47·9	48·7	49·8	50·8	45·8
22	62·6	37·7	47·9	58·9	60·9	44·6	45·8	49·8	50·0	43·3
23	68·0	39·1	60·4	66·2	65·6	52·4	53·3	54·8	54·4	52·0
24	67·0	48·6	58·6	63·1	65·1	48·6	54·7	54·8	54·5	47·2
25	69·1	42·6	58·6	63·8	64·4	60·2	53·9	53·8	56·3	55·8
26	71·7	53·0	59·9	65·6	68·8	54·0	55·3	55·5	56·4	51·8
27	70·9	49·1	60·5	65·5	68·7	59·1	55·0	56·8	58·6	57·0
28	60·9	50·7	54·6	57·8	58·1	50·8	50·3	50·3	50·3	46·1
29	60·2	40·3	51·1	57·1	56·6	52·6	46·1	48·3	46·9	46·1
30	59·4	46·9	57·9	51·5	50·5	47·2	54·1	46·4	45·2	42·7
Means	72·2	49·0	62·0	67·9	69·3	56·9	55·9	57·0	57·3	53·1

OCTOBER.

Days of the Month.	Maximum.	Minimum.	9h	Noon.	15h	21h	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°
1	51·7	41·1	45·8	50·5	51·0	44·2	41·2	44·4	44·8	40·3
2	52·5	34·4	42·7	51·1	50·9	41·0	40·2	43·1	44·0	40·1
3	56·4	39·2	44·6	55·1	55·7	48·5	41·8	47·3	48·0	46·6
4	55·0	43·0	48·1	50·7	52·6	47·9	44·6	47·2	48·3	46·2
5	57·8	45·4	49·6	54·3	56·7	53·4	48·8	51·6	51·5	50·8
6	59·5	45·0	51·3	55·4	58·1	46·2	49·4	51·0	51·6	45·9
7	53·6	44·6	49·1	53·0	53·4	50·6	48·0	51·1	51·7	49·7
8	60·0	39·7	49·1	57·3	57·8	50·0	48·1	53·5	53·3	49·3
9	55·1	44·1	52·1	53·7	52·5	45·1	48·4	47·5	46·8	43·4
10	58·8	40·2	49·9	56·8	54·8	47·7	46·8	50·5	49·4	45·9
11	60·0	47·2	52·4	55·9	56·6	47·6	50·5	52·0	51·1	47·0
12	67·6	41·7	51·0	62·5	64·9	49·6	49·3	55·7	57·6	49·4
13	60·0	48·1	52·0	56·6	59·6	56·1	52·0	56·1	58·4	56·0
14	57·4	53·9	55·6	55·5	57·2	55·0	55·6	55·3	56·0	54·2
15	57·4	52·1	54·3	56·6	54·4	52·6	52·8	53·8	53·4	52·1
16	54·7	51·4	53·5	52·6	53·9	52·2	51·8	51·7	52·2	51·9
17	58·6	48·1	53·6	57·3	57·2	48·6	51·7	53·4	53·4	48·4
18	62·7	45·1	48·3	54·6	61·6	50·1	48·2	53·3	56·8	50·1
19	64·1	48·1	55·0	60·9	62·8	55·7	54·3	58·4	59·0	55·0
20	63·0	52·7	58·3	62·1	59·0	55·9	57·4	59·4	56·5	54·8
21	62·0	52·1	58·6	60·6	60·9	52·1	55·6	56·8	56·3	51·2
22	61·5	50·8	54·7	57·0	55·8	53·2	52·9	51·9	53·1	51·0
23	59·0	50·1	53·6	55·6	56·7	51·9	51·1	51·1	49·8	49·7
24	57·0	49·1	53·8	53·6	56·5	49·9	52·1	52·4	53·9	49·3
25	54·3	41·8	44·9	50·1	48·9	42·2	43·9	46·0	43·8	40·5
26	55·6	35·1	46·8	48·3	55·3	47·9	44·9	46·5	50·2	44·2
27	50·5	38·2	45·6	50·2	48·1	46·6	43·6	45·1	45·4	44·4
28	50·2	38·1	41·2	48·8	48·0	39·2	39·1	43·1	42·5	37·5
29	49·0	28·1	34·6	46·7	47·3	46·8	33·8	41·9	41·4	45·4
30	59·2	46·2	56·3	58·3	55·0	46·6	52·8	52·8	53·0	43·8
31	54·5	38·2	46·3	52·6	53·0	45·1	42·4	46·6	46·8	43·5
Means	57·4	44·3	50·1	54·7	55·4	49·0	48·2	50·7	51·0	47·7

NOVEMBER.

Days of the Month.	Dry-Bulb Thermometers, 4 ft. above the Ground.						Wet-Bulb Thermometer, 4 ft. above the Ground.			
	Maximum.	Minimum.	9h	Noon.	15h	21h	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°
1	54·0	40·1	44·0	51·1	52·7	43·9	41·7	46·0	45·8	42·7
2	57·0	43·9	49·9	53·9	53·6	49·9	47·3	49·1	49·8	49·2
3	57·0	39·2	48·1	56·2	53·6	52·6	45·7	51·3	50·1	49·1
4	55·2	49·9	52·0	54·4	53·5	52·6	49·0	49·2	48·4	51·8
5	59·0	45·1	54·0	54·6	54·1	45·1	49·1	47·0	45·7	40·3
6	51·5	39·0	43·0	49·9	50·0	42·9	39·9	44·5	44·5	40·2
7	54·4	38·1	45·2	51·4	52·3	50·0	42·5	47·5	48·4	48·3
8	52·8	42·4	47·7	47·6	47·8	42·7	43·8	44·8	45·3	40·3
9	49·3	37·1	40·1	47·2	46·3	37·9	39·2	42·8	42·8	37·0
10	43·7	35·4	41·7	40·9	40·9	40·6	40·2	39·7	40·2	39·8
11	46·9	34·1	38·6	46·2	45·1	43·5	36·6	41·6	41·8	42·9
12	56·5	42·9	54·8	55·3	53·0	46·7	51·8	52·0	49·8	42·2
13	51·0	44·1	44·6	49·9	49·6	46·2	43·0	46·4	46·2	44·2
14	55·7	38·2	51·3	53·7	54·1	48·6	47·5	49·6	50·4	46·7
15	52·6	44·6	47·5	50·2	50·6	51·1	44·5	46·7	48·0	48·7
16	58·0	50·1	53·7	57·5	54·0	50·1	51·6	54·5	51·2	47·9
17	54·0	47·1	51·0	51·9	52·0	47·9	49·3	47·7	46·9	46·1
18	49·0	41·0	44·7	45·3	43·1	41·5	44·3	44·9	41·9	39·2
19	44·6	38·2	39·9	41·0	41·6	44·6	36·8	39·0	40·6	43·0
20	47·0	41·1	44·5	45·7	46·8	41·8	42·4	43·3	43·5	39·5
21	42·0	32·1	36·6	38·5	37·5	32·1	34·2	34·1	32·0	30·6
22	38·0	28·3	34·5	37·4	36·2	33·2	33·2	35·8	35·2	32·4
23	42·5	33·1	41·5	42·5	41·2	41·4	38·5	39·1	38·3	38·8
24	42·8	40·1	40·6	42·2	41·1	41·9	38·1	39·3	38·1	38·8
25	43·0	37·0	39·7	42·3	41·4	37·0	37·7	38·9	38·0	34·8
26	39·7	32·9	34·5	38·3	36·3	34·3	33·7	35·5	34·8	33·5
27	36·6	30·5	33·2	34·8	35·9	33·3	33·1	34·4	34·7	32·4
28	49·0	33·2	39·9	46·6	48·0	44·6	39·2	45·6	46·9	44·1
29	47·5	34·4	44·6	46·2	45·8	34·4	43·3	43·5	42·9	34·2
30	45·8	30·1	40·9	45·6	45·2	44·6	40·9	44·0	44·2	43·8
Means	49·2	38·8	44·1	47·3	46·8	43·2	41·9	43·9	43·5	41·4

DECEMBER.

Days of the Month.	Maximum.	Minimum.	9h	Noon.	15h	21h	9h	Noon.	15h	21h
d	°	°	°	°	°	°	°	°	°	°
1	46·7	41·5	43·5	45·6	46·3	45·9	42·1	44·6	44·6	45·0
2	47·5	44·2	45·6	46·6	46·9	47·5	44·4	45·4	45·7	46·4
3	53·8	45·1	50·6	53·1	51·2	45·9	50·2	50·5	48·5	45·3
4	46·1	33·9	42·4	45·4	43·9	34·2	41·8	42·7	39·9	33·4
5	49·2	33·2	47·1	46·9	46·8	39·3	46·2	45·1	43·8	37·9
6	45·6	30·8	33·0	41·2	43·4	40·4	32·6	38·8	40·0	38·5
7	45·4	37·8	42·1	42·8	42·5	37·8	40·8	41·8	40·9	36·0
8	43·0	28·9	33·9	41·1	42·6	37·8	31·8	38·3	39·3	37·1
9	43·8	36·5	40·2	42·6	43·3	37·3	39·3	39·0	39·0	35·3
10	48·0	36·1	46·2	45·3	46·0	48·0	44·5	44·1	44·9	46·8
11	48·0	39·0	43·3	46·9	44·9	39·0	39·8	42·4	41·3	37·1
12	49·5	34·1	39·8	46·5	47·6	40·8	38·8	44·0	45·7	40·7
13	47·8	39·3	42·9	45·7	47·3	45·7	41·0	43·8	45·7	44·8
14	50·0	41·3	42·6	48·1	47·7	46·9	41·6	45·6	45·2	45·0
15	50·7	42·1	48·6	48·5	46·0	42·3	47·4	47·1	42·5	40·8
16	50·4	38·3	39·4	47·2	48·8	50·2	38·8	45·0	47·5	48·9
17	53·9	48·9	51·6	53·6	51·3	49·9	50·1	50·3	48·8	48·0
18	51·0	47·3	49·7	49·9	47·9	50·6	47·3	47·3	46·7	49·3
19	52·7	46·0	51·6	51·5	50·8	49·2	50·6	49·8	49·0	48·4
20	51·0	43·8	49·5	49·6	46·6	43·8	48·8	49·1	44·5	42·2
21	45·3	41·1	43·9	44·7	43·8	43·1	43·5	44·6	43·3	41·8
22	44·6	39·3	41·1	42·3	41·2	44·6	39·4	40·8	41·0	44·2
23	45·9	35·1	37·5	40·2	41·9	37·1	36·4	38·8	39·7	36·2
24	52·8	36·8	51·6	51·6	49·4	44·4	50·8	49·8	45·2	41·8
25	44·6	40·0	41·0	43·6	44·0	42·6	38·8	40·8	40·2	40·4
26	49·4	39·2	40·7	43·9	42·3	49·3	39·8	42·6	42·1	47·5
27	49·3	38·1	38·6	41·7	41·1	41·7	37·9	40·0	39·8	40·3
28	51·7	40·1	46·6	51·3	51·0	49·6	46·2	50·5	49·2	47·8
29	50·0	46·5	48·2	49·6	49·2	47·3	47·0	47·8	46·9	45·9
30	51·3	46·2	47·6	50·0	50·6	48·5	46·4	48·4	48·9	47·8
31	49·0	42·1	43·7	45·6	45·6	47·0	43·7	44·0	44·3	45·9
Means	48·6	39·8	44·0	46·5	46·2	44·1	42·8	44·6	44·0	42·8

EXCESS of MEAN MONTHLY READINGS of THERMOMETERS placed in a STEVENSON'S SCREEN above those of the corresponding THERMOMETERS on the adjacent ORDINARY STAND in the MAGNETIC PAVILION ENCLOSURE in the YEAR 1911.

(The readings of the maximum and minimum thermometers apply to the twenty-four hours ending at 21^h.)

MONTH, 1911.	Dry Bulb Thermometers, 4 ft. above the Ground.						Wet Bulb Thermometer, 4 ft. above the Ground.			
	Maximum.	Minimum.	9^h	Noon.	15^h	21^h	9^h	Noon.	15^h	21^h
	°	°	°	°	°	°	°	°	°	°
January	+ 0·1	+ 0·4	+ 0·2	0·0	+ 0·1	+ 0·2	0·0	0·0	+ 0·1	+ 0·2
February	− 0·2	+ 0·6	0·0	− 0·2	0·0	+ 0·3	0·0	− 0·2	+ 0·1	+ 0·1
March	− 0·6	+ 0·4	0·0	− 0·1	− 0·1	+ 0·2	+ 0·1	+ 0·1	+ 0·1	+ 0·3
April	− 1·0	+ 0·5	− 0·4	− 0·3	− 0·4	+ 0·1	− 0·2	− 0·1	− 0·3	+ 0·2
May	− 1·9	+ 0·5	− 0·5	− 0·6	− 0·5	+ 0·2	− 0·6	− 0·6	− 0·5	0·0
June	− 2·0	+ 0·7	− 0·8	− 0·9	− 0·7	+ 0·2	− 0·6	− 0·5	− 0·4	+ 0·1
July	− 2·4	+ 0·8	− 0·8	− 1·1	− 1·1	+ 0·3	− 0·5	− 0·4	− 0·4	+ 0·3
August	− 2·6	+ 0·8	− 0·8	− 1·0	− 0·8	+ 0·3	− 0·7	− 1·0	− 0·7	+ 0·1
September	− 1·2	+ 0·8	− 0·2	− 0·2	− 0·3	+ 0·4	− 0·2	− 0·1	− 0·2	+ 0·3
October	− 0·6	+ 0·6	− 0·1	− 0·2	− 0·1	+ 0·3	− 0·1	− 0·2	− 0·1	+ 0·2
November	− 0·3	+ 0·4	+ 0·1	0·0	+ 0·1	+ 0·4	+ 0·2	+ 0·2	+ 0·4	+ 0·4
December	0·0	+ 0·6	+ 0·1	+ 0·1	+ 0·1	+ 0·4	+ 0·2	+ 0·1	+ 0·2	+ 0·3
Means	− 1·1	+ 0·6	− 0·3	− 0·4	− 0·3	+ 0·3	− 0·2	− 0·2	− 0·1	+ 0·2

AMOUNT of RAIN COLLECTED in each MONTH of the YEAR 1911.

MONTH, 1911.	Number of Rainy Days (0in·005 or over).	Monthly Amount of Rain collected in each Gauge.							
		Self-registering Gauge of Osler's Anemometer.	Second Gauge at Osler's Anemometer.	On the roof of the Octagon Room.	On the roof of the Magnetic Observatory.	On the roof of the Photographic Thermometer Shed.	Gauges partly sunk in the ground. In Magnetic Pavilion Enclosure.	In Observatory Grounds.	In Magnetic Pavilion Enclosure.
		No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.	No. 7.	No. 8.
		in.	in.	in.	in.	in.	in.	in.	in.
January	12	0·582	0·494	0·910	0·898	1·152	1·233	1·129	1·180
February	16	0·576	0·446	0·918	0·989	1·243	1·376	1·262	1·329
March	15	0·545	0·665	1·220	1·399	1·615	1·655	1·561	1·596
April	12	1·105	1·049	1·408	1·548	1·658	1·734	1·666	1·686
May	8	1·658	1·683	1·860	1·994	2·079	1·876	2·085	1·848
June	12	1·614	1·568	1·957	2·032	2·098	2·096	2·088	2·102
July	4	0·227	0·164	0·219	0·245	0·267	0·268	0·259	0·278
August	8	1·006	1·087	1·233	1·325	1·372	1·343	1·334	1·324
September	10	0·843	0·856	1·175	1·275	1·343	1·336	1·323	1·319
October	17	2·485	2·219	2·810	3·041	3·361	3·299	3·267	3·273
November	21	2·112	1·916	2·630	2·842	3·264	3·422	3·254	3·392
December	23	2·592	2·393	2·884	3·410	3·890	4·020	3·787	3·982
Sums	158	15·345	14·540	19·224	20·998	23·342	23·658	23·015	23·309
Height of receiving Surface above the ground	...	ft. in. 50. 8	ft. in. 50. 8	ft. in. 38. 4	ft. in. 21. 6	ft. in. 10. 0	ft. in. 0. 5	ft. in. 0. 5	ft. in. 1. 0
Height of receiving Surface above mean sea level	...	ft. in. 205. 6	ft. in. 205. 6	ft. in. 193. 2	ft. in. 176. 4	ft. in. 164. 10	ft. in. 149. 6	ft. in. 155. 3	ft. in. 150. 1

ABSTRACT of the CHANGES of the DIRECTION of the WIND, as derived from the Records of OSLER'S ANEMOMETER in the Year 1911.

(It is to be understood that the direction of the wind was nearly constant in the intervals between the times given in the second column and those next following in the first column.)

Directions are given to 16 points of the Compass, 0 = N, 1 = NNE . . . . . . 15 = NNW.

Note.—The time is expressed in civil reckoning, commencing at midnight and counting from 0^h to 24^h.

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction.	Amount of Motion. Direct.	Amount of Motion. Retrograde.
January.				
d h	d h			
1. 0¼	1. 0¾	11—12	1	
1. 10¾	1. 12¾	12—1	5	
2. 0	2. 1¾	1—0		1
2. 11	2. 12	0—1	1	
2. 23	2. 23½	1—0		1
3. 1	3. 3¼	0—11		5
3. 4¼	3. 4½	11—5		6
3. 6½	3. 7	5—4		1
3. 8¾	3. 9½	4—5	1	
3. 11½	3. 12	5—4		1
3. 14	3. 15¼	4—3		1
3. 19	3. 19¾	3—2		1
4. 11½	4. 12	2—3	1	
4. 22¾	4. 23	3—2		1
5. 8	5. 8¼	2—1		1
5. 12	5. 13	1—2	1	
5. 17	5. 19	2—5	3	
5. 21½	5. 21¾	5—6	1	
6. 0½	6. 1	6—10	4	
6. 4	6. 5½	10—9		1
6. 8¼	6. 9½	9—10	1	
6. 18¾	6. 19	10—0	6	
6. 20½	7. 0	0—12		4
7. 1	7. 1½	12—13	1	
7. 17¼	7. 17½	13—10		3
8. 5¼	8. 6	10—11	1	
8. 15¾	8. 16	11—12	1	
9. 9½	9. 10	12—13	1	
9. 11¾	9. 12	13—12		1
9. 14½	9. 16	12—2	6	
9. 17¼	9. 17½	2—1		1
9. 20¾	9. 21¼	1—0		1
10. 2¾	10. 3¼	0—15		1
10. 6¾	10. 7	15—14		1
10. 8½	10. 10	14—0	2	
10. 11	10. 11½	0—14		2
10. 12½	10. 12¾	14—15	1	
10. 15	10. 16¼	15—11		4
10. 17¾	10. 18	11—12	1	
10. 20¾	10. 22¼	12—10		2
11. 0½	11. 2	10—11	1	
11. 12	11. 12¼	11—12	1	
11. 20½	11. 21¼	12—11		1
11. 23	12. 0	11—13	2	
12. 1	12. 1¼	13—2	5	
12. 4	12. 4¼	2—3	1	
12. 11½	12. 11¾	3—2		1
13. 20¼	13. 20½	2—1		1
14. 9	14. 9¼	1—10		7
14. 13¾	14. 14	10—11	1	
14. 21½	14. 22	11—10		1
15. 0	15. 0¼	10—11	1	

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction.	Amount of Motion. Direct.	Amount of Motion. Retrograde.
Jan.—*cont.*				
d h	d h			
15. 13	15. 14	11—12	1	
15. 17½	15. 17¾	12—10		2
15. 19½	15. 21¾	10—12	2	
16. 1½	16. 2	12—11		1
16. 5	16. 5½	11—12	1	
16. 13½	16. 15	12—4	8	
16. 17	16. 17¼	4—7	3	
16. 22¼	16. 23½	7—11	4	
17. 1¼	17. 1½	11—12	1	
17. 16½	17. 17½	12—11		1
17. 18½	17. 19	11—12	1	
18. 2½	18. 2¾	12—14	2	
18. 7¼	18. 8	14—15	1	
18. 9¼	18. 9½	15—0	1	
18. 10½	18. 11½	0—14		2
18. 15	18. 16	14—0	2	
18. 18¼	18. 19	0—12		4
18. 20	18. 21	12—15	3	
18. 23¾	19. 0	15—11		4
19. 9¼	19. 9½	11—10		1
20. 12¼	20. 12½	10—7		3
20. 16¼	20. 16½	7—9	2	
20. 18	20. 18¼	9—5		4
20. 19¾	20. 20	5—8	3	
21. 4	21. 7½	8—11	3	
21. 21¼	21. 21½	11—15	4	
22. 2¼	22. 3	15—0	1	
22. 6	22. 7	0—10	10	
22. 14½	22. 15¼	10—3		7
22. 15¾	22. 16½	3—7	4	
23. 3	23. 3¼	7—5		2
23. 3¾	23. 4	5—7	2	
23. 11¼	23. 12	7—10	3	
23. 18	23. 18¼	10—9		1
23. 21¾	23. 22½	9—10	1	
24. 9¼	24. 9¾	10—11	1	
24. 14	24. 17	11—10		1
25. 0¾	25. 1¼	10—11	1	
25. 3	25. 5	11—10		1
25. 10	25. 11	10—11	1	
26. 9¼	26. 10	11—12	1	
26. 22½	26. 22¾	12—11		1
27. 3¾	27. 4¼	11—12	1	
27. 7½	27. 8¼	12—11		1
27. 20½	27. 20¾	11—10		1
27. 21¾	27. 22	10—11	1	
28. 6	28. 6½	11—10		1
28. 18	28. 18¼	10—6		4
28. 19¼	28. 20½	6—9	3	
29. 4	29. 4¼	9—1		8
29. 6¼	29. 6½	1—2	1	
29. 8½	29. 8¾	2—9	7	

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction.	Amount of Motion. Direct.	Amount of Motion. Retrograde.
Jan.—*cont.*				
d h	d h			
29. 10¾	29. 11¾	9—2		7
29. 15	29. 15¼	2—4	2	
29. 16½	29. 16¾	4—5	1	
30. 4	30. 5	5—4		1
30. 18	30. 19½	4—5	1	
31. 14¾	31. 16	5—4		1
31. 18½	31. 19½	4—3		1
		Sums	135	111
February.				
1. 1	1. 3	3—2		1
1. 11	1. 11½	2—3	1	
1. 14	1. 14½	3—4	1	
2. 4¼	2. 5¼	4—15		5
2. 9¼	2. 12	15—1	2	
2. 13	2. 13¼	1—0		1
2. 22¼	2. 23¼	0—12		4
3. 2	3. 3	12—11		1
3. 4	3. 4¼	11—15	4	
3. 6	3. 6¼	15—0	1	
3. 10	3. 10½	0—1	1	
3. 16	3. 17	1—2	1	
4. 1	4. 2¼	2—0		2
4. 5	4. 5¾	0—1	1	
4. 16¾	4. 17	1—2	1	
4. 20	4. 22	2—0		2
5. 0½	5. 0¾	0—1	1	
5. 3	5. 3½	1—0		1
5. 9	5. 9½	0—1	1	
5. 12½	5. 12¾	1—0		1
5. 16	5. 16½	0—1	1	
5. 23	5. 23¼	1—0		1
7. 9½	7. 10	0—10	10	
7. 12¾	7. 13½	10—11	1	
7. 18	7. 18¼	11—0	5	
7. 20	7. 20½	0—14		2
7. 22¾	7. 23	14—12		2
8. 0½	8. 3	12—0	4	
8. 6¾	8. 7½	0—1	1	
8. 9¼	8. 9½	1—2	1	
8. 22	8. 22½	2—3	1	
8. 23¼	8. 23½	3—7	4	
9. 3¼	9. 3½	7—10	3	
9. 5¼	9. 5¾	10—7		3
9. 18	9. 19	7—6		1
10. 4½	10. 5½	6—7	1	

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction.	Amount of Motion. Direct.	Amount of Motion. Retrograde.
Feb.—*cont.*				
d h	d h			
10. 7½	10. 8½	7—6		1
10. 10½	10. 11½	6—9	3	
10. 13¾	10. 14¼	9—10	1	
10. 19½	10. 20½	10—11	1	
11. 1¼	11. 3	11—15	4	
11. 7	11. 8¾	15—13		2
11. 10¼	11. 10½	13—14	1	
11. 14	11. 14¼	14—15	1	
11. 15¼	11. 15½	15—14		1
11. 22	11. 23½	14—12		2
12. 1	12. 1½	12—11		1
12. 5	12. 5¾	11—12	1	
12. 7	12. 9½	12—15	3	
12. 19	12. 20	15—0	1	
13. 1¼	13. 2¼	0—11		5
13. 4¾	13. 5	11—9		2
13. 12¾	13. 13	9—7		2
13. 16¼	13. 17¾	7—10	3	
13. 22	14. 0	10—9		1
14. 9¾	14. 10½	9—10	1	
14. 11½	14. 11¾	10—11	1	
14. 16	14. 17	11—10		1
14. 23¼	15. 0½	10—11	1	
15. 7¾	15. 9¾	11—15	4	
15. 14¼	15. 14½	15—0	1	
15. 17¼	15. 17½	0—10	10	
15. 20½	15. 21	10—9		1
16. 0¾	16. 1	9—10	1	
16. 10¼	16. 12	10—11	1	
17. 2	17. 6½	11—12	1	
17. 16	17. 16½	12—11		1
19. 0	19. 1½	11—12	1	
19. 5¾	19. 6	12—11		1
19. 7¼	19. 7½	11—12	1	
19. 15½	19. 16	12—13	1	
19. 18	19. 18¾	13—15	2	
19. 19½	19. 20½	15—14		1
20. 0¼	20. 0½	14—12		2
20. 2	20. 2¾	12—11		1
20. 7¼	20. 7¾	11—12	1	
20. 9¼	20. 9¾	12—13	1	
20. 15½	20. 15¾	13—12		1
20. 22	20. 22¼	12—11		1
21. 6¾	21. 7	11—10		1
22. 5	22. 7½	10—12	2	
22. 18	22. 19½	12—11		1
22. 22	22. 22½	11—10		1
23. 14	23. 14½	10—11	1	
24. 5	24. 6	11—12	1	
24. 10½	24. 10¾	12—13	1	
24. 16	24. 17	13—12		1
24. 18	24. 18½	12—11		1

ABSTRACT of the CHANGES of the DIRECTION of the WIND—*continued.*

Greenwich Civil Time. From	To	Change of Direction.	Amount of Motion. Direct.	Retrograde.
Feb.—*cont.*				
d h	d h			
24.23	25. 3	11—8		3
25. 3¾	25. 4¼	8—10	2	
25. 6	25. 6¼	10—11	1	
25.12	25.13	11—12	1	
25.17¾	25.18¾	12—13	1	
25.19¾	25.20¼	13—12		1
26. 0¼	26. 1	12—11		1
26. 3¾	26. 4¾	11—13	2	
26. 8¼	26. 8¾	13—14	1	
26.18¾	26.20¼	14—12		2
26.22½	26.23½	12—11		1
27. 2½	27. 3	11—10		1
27. 5	27. 5¼	10—8		2
27.12½	27.13	8—9	1	
27.17	27.18	9—10	1	
28.22½	28.24	10—15	5	
		Sums	114	70
March.				
1. 0¾	1. 1¾	15—13		2
1. 3	1. 3¾	13—12		1
1. 9½	1.10	12—13	1	
1.14	1.14½	13—12		1
1.16½	1.16¾	12—11		1
2.10	2.11	11—12	1	
2.14	2.14¼	12—13	1	
2.17¾	2.18	13—12		1
2.21	2.21½	12—11		1
2.23¾	3. 0	11—12	1	
3.10	3.12½	12—13	1	
3.16¼	3.16½	13—12		1
3.23	3.23½	12—11		1
4.19	4.19¾	11—1	6	
4.22¾	4.23	1—0		1
5. 6¾	5. 7½	0—14		2
5. 8¾	5. 9	14—0	2	
5.13	5.13¼	0—1	1	
5.17¾	5.18	1—10	9	
6. 4	6. 6	10—9		1
6. 8½	6. 9¼	9—11	2	
6.13¼	6.13½	11—14	3	
6.13¾	6.15	14—11		3
6.15½	6.15¾	11—12	1	
6.20	6.21	12—11		1
6.22¼	6.22½	11—0	5	
7. 2	7. 2½	0—1	1	
7. 9½	7.10	1—2	1	
7.18¼	7.18¾	2—1		1
8. 2¾	8. 3	1—10		7
8. 8½	8. 9	10—11	1	
8.17	8.18	11—10		1
8.22½	8.23	10—9		1
9. 3½	9. 4¼	9—10	1	
9.10	9.10¼	10—15	5	
9.16¼	9.16½	15—14		1

Greenwich Civil Time. From	To	Change of Direction.	Amount of Motion. Direct.	Retrograde.
Mar.—*cont.*				
d h	d h			
9.20¼	9.20½	14—15	1	
9.22¼	10. 2½	15—10		5
10.18½	10.19	10—9		1
10.20	10.21½	9—10	1	
11. 9½	11.11	10—11	1	
12. 5¾	12. 6¼	11—10		1
12. 7½	12. 8	10—11	1	
12.10	12.10½	11—10		1
12.18	13. 3	10—0		10
13. 8¾	13. 9¼	0—15		1
13.17¾	13.18	15—0	1	
13.23	13.23¼	0—15		1
14. 7¾	14. 8½	15—0	1	
14.18¼	14.18½	0—15		1
14.21½	14.21¾	15—14		1
15. 4½	15. 5½	14—12		2
15. 7	15. 7¾	12—13	1	
15.11	15.12	13—0	3	
15.16½	15.16¾	0—15		1
15.22	15.22½	15—0	1	
16. 5	16. 5¼	0—2	2	
16.13¾	16.14	2—1		1
16.21¼	17. 0½	1—11		6
17. 3	17. 5	11—9		2
17. 7	17. 7½	9—7		2
17. 9¾	17.10	7—6		1
17.12½	17.12¾	6—4		2
17.13¼	17.13¾	4—8	4	
17.14¾	17.15½	8—5		3
17.18	17.19	5—4		1
19. 1½	19. 1¾	4—3		1
19.10¼	19.11	3—4	1	
19.17	19.18	4—3		1
19.22¼	19.22½	3—2		1
20. 0½	20. 1	2—3	1	
20. 5¼	20. 6	3—4	1	
20.19	20.20¼	4—2		2
21. 4	21. 5	2—3	1	
21. 8	21. 8¼	3—4	1	
21. 9¼	21. 9½	4—5	1	
21.11¼	21.12½	5—6	17	
21.20	21.20¾	6—5		1
22. 0½	22. 1½	5—4		1
22.10¼	22.10½	4—5	1	
22.13¼	22.13½	5—4		1
22.15	22.16	4—5	1	
22.17¾	22.18¾	5—4		1
22.21½	22.22	4—2		2
23. 5½	23. 6¾	2—4	2	
23. 7¾	23. 8	4—2		2
23. 9½	23.11	2—4	2	
23.19	23.20	4—3		1
24. 3	24. 3¾	3—2		1
24. 5½	24. 6½	2—3	1	
24. 8	24. 9	3—4	1	
24.10	24.10¼	4—3		1
24.17¾	24.22¾	3—0		3
24.23½	25. 0	0—1	1	
25. 7	25. 7½	1—2	1	
25.17	25.18	2—1		1
26. 7	26. 7¾	1—2	1	

Greenwich Civil Time. From	To	Change of Direction.	Amount of Motion. Direct.	Retrograde.
Mar.—*cont.*				
d h	d h			
27. 3	27. 3½	2—1		1
27.11½	27.12	1—2	1	
27.14	27.21¼	2—5	3	
28. 3½	28. 4½	5—4		1
28. 7¼	28. 7¾	4—5	1	
28.17¾	28.18	5—4		1
28.20¾	28.21½	4—3		1
29. 2½	29. 2¾	3—2		1
30. 0¼	30. 0½	2—1		1
30. 8	30. 8½	1—0		1
30.20¼	30.20½	0—11		5
31.15	31.15¼	11—12	1	
31.17½	31.18½	12—2	6	
		Sums	106	103
April.				
1.15½	1.15¾	2—1		1
2. 1¼	2. 1½	1—2	1	
2. 4	2. 4¼	2—0		2
2. 6	2. 6½	0—1	1	
2. 8¼	2. 9¾	1—0		1
2.19	2.19½	0—2	2	
2.21	2.21½	2—0		2
3. 6	3. 8	0—1	1	
3.16	3.16½	1—2	1	
3.17¼	3.17½	2—1		1
4. 0½	4. 1¼	1—0		1
4. 3	4. 3¾	0—1	1	
4.14¾	4.15	1—0		1
4.20	4.21	0—1	1	
5. 3	5. 3½	1—2	1	
5. 9¼	5. 9¾	2—3	1	
5.13¼	5.13¾	3—2		1
6. 7¼	6. 8	2—3	1	
6.18	6.20	3—2		1
7.10	7.10¼	2—3	1	
7.11½	7.12	3—4	1	
7.18	7.22	4—1		3
8. 0	8. 0¼	1—0		1
8. 1½	8. 1¾	0—1	1	
8.12	8.12½	1—2	1	
9. 2	9. 2¼	2—1		1
9. 5¾	9. 6	1—2	1	
9. 7¾	9. 8	2—0		2
9.11	9.11¼	0—1	1	
9.20¾	9.22	1—0		1
10. 9	10.10½	0—1	1	
10.19½	10.20	1—2	1	
11. 8¼	11. 9¼	2—3	1	
11.10½	11.11½	3—2		1
11.14½	11.16¾	2—4	2	
11.20½	11.21	4—3		1
11.22½	11.23	3—2		1
12. 7¾	12. 8	2—10	8	
12. 9¼	12.10	10—0	6	

Greenwich Civil Time. From	To	Change of Direction.	Amount of Motion. Direct.	Retrograde.
Apr.—*cont.*				
d h	d h			
12.11	12.11¼	0—15		1
12.19¼	12.19½	15—3	4	
12.22½	12.23¾	3—1		2
13. 1¾	13. 2¼	1—2	1	
13.10	13.10¼	2—1		1
13.12	13.12¼	1—2	1	
13.17	13.17¼	2—5	3	
13.20	13.20½	5—6	1	
14. 1	14. 1¼	6—7	1	
14. 2¾	14. 3	7—10	3	
14. 7	14. 8	10—11	1	
14.13	14.14	11—14	3	
14.16¼	14.16½	14—12		2
14.18	14.18¼	12—9		3
14.20	14.20½	9—11	2	
15. 5	15. 5½	11—10		1
15.10¾	15.11	10—11	1	
15.17¼	15.17½	11—10		1
15.19½	15.20¾	10—12	2	
16. 0	16. 3	12—10		2
16. 6	16. 6½	10—11	1	
16.11	16.11½	11—12	1	
16.18¼	16.19	12—11		1
16.20¼	16.20¾	11—10		1
16.22	16.23	10—11	1	
17. 9¼	17. 9½	11—10		1
18. 2¼	18. 2½	10—9		1
18. 6	18. 6¼	9—10	1	
18. 9¾	18.11	10—8		2
18.15½	18.16	8—9	1	
18.17¼	18.17½	9—10	1	
20. 6	20. 6¾	10—11	1	
20.10¼	20.10¾	11—12	1	
20.15¾	20.16	12—11		1
20.20	20.20½	11—10		1
21.13	21.15	10—12	2	
21.21½	21.21¾	12—11		1
22. 1¼	22. 1¾	11—12	1	
22. 3	22. 3½	12—11		1
22.11¾	22.12	11—10		1
22.16¾	22.17	10—11	1	
22.23¾	23. 0	11—10		1
23. 1½	23. 2	10—11	1	
23. 6	23. 7	11—10		1
23. 8½	23. 8¾	10—11	1	
23.14¾	23.16	11—12	1	
23.17¼	23.17½	12—11		1
23.19½	23.21	11—13	2	
23.22	23.22½	13—11		2
24. 3¾	24. 4½	11—12	1	
24.21	24.21¼	12—11		1
25.15	25.16¼	11—10		1
26. 9¼	26. 9¾	10—13	3	
26.11¾	26.12	13—12		1
26.13¼	26.13½	12—13	1	
26.16	26.17	13—11		2
26.22¾	26.23	11—10		1
27. 4¾	27. 5¼	10—9		1
27. 8½	27.11½	9—11	2	
27.18¾	27.19¼	11—12	1	
27.20½	27.21½	12—11		1

ABSTRACT of the CHANGES of the DIRECTION of the WIND—*continued.*

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction.	Amount of Motion. Direct.	Amount of Motion. Retrograde.
Apr.—*cont.*				
d h	d h			
28. 6	28. 7¾	11—12	1	
28. 12	28. 12¼	12—11		1
28. 15	28. 15¼	11—10		1
28. 20	28. 20½	10—9		1
28. 21¾	28. 23½	9—11	2	
29. 3	29. 5	11—10		1
29. 6	29. 6¼	10—11	1	
29. 13	29. 14	11—10		1
30. 5	30. 5¼	10—0	6	
30. 17½	30. 18½	0—1	1	
30. 22¾	30. 23	1—8	7	
		Sums	102	64
May.				
1. 0¼	1. 0½	8—11	3	
1. 17¾	1. 18	11—10		1
2. 20½	2. 22¼	10—12	2	
3. 0	3. 1	12—11		1
3. 7½	3. 7¾	11—10		1
3. 21½	3. 22	10—12	2	
4. 3	4. 3¼	12—11		1
4. 4¾	4. 7¾	11—13	2	
4. 13½	4. 14	13—14	1	
4. 16½	4. 17¼	14—13		1
4. 18½	4. 18¾	13—12		1
5. 0	5. 0½	12—11		1
5. 7½	5. 8¼	11—13	2	
5. 15½	5. 16¾	13—14	1	
5. 18	5. 19¾	14—1	3	
5. 21½	5. 22¾	1—0		1
6. 8	6. 8¼	0—2	2	
6. 10	6. 10¼	2—3	1	
6. 11½	6. 12½	3—5	2	
6. 16¾	6. 23½	5—8	3	
7. 9¼	7. 9½	8—10		14
7. 10½	7. 10¾	10—7	13	
7. 17	7. 17¼	7—6		1
8. 9	8. 10	6—2		4
8. 11	8. 11¾	2—3	1	
8. 13½	8. 13¾	3—4	1	
8. 20½	8. 23½	4—2		2
9. 4	9. 5	2—1		1
9. 11½	9. 11¾	1—2	1	
9. 14	9. 16	2—4	2	
9. 19	9. 20¾	4—2		2
10. 0¾	10. 1	2—0		2
10. 3	10. 3¼	0—1	1	
10. 10½	10. 11	1—2	1	
10. 13½	10. 14	2—4	2	
10. 15¼	10. 15½	4—5	1	
10. 19	10. 23	5—0		5
11. 0¼	11. 0½	0—1	1	
11. 5	11. 6	1—0		1
11. 11	11. 12¼	0—8		8
11. 13¾	11. 15	8—0	8	

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction.	Amount of Motion. Direct.	Amount of Motion. Retrograde.
May—*cont.*				
d h	d h			
11. 17	11. 18	0—2	2	
11. 21	11. 21½	2—3	1	
11. 23¼	11. 23¾	3—2		1
12. 2¼	12. 3¾	2—0		2
12. 5	12. 5¼	0—1	1	
12. 6½	12. 6¾	1—0		1
12. 19	12. 19¼	0—5	5	
12. 21½	12. 21¾	5—2		3
12. 22¾	12. 23½	2—3	1	
13. 4	13. 4¼	3—10	7	
13. 5¼	13. 5½	10—0	6	
13. 11¼	13. 11¾	0—11	11	
13. 15	13. 15½	11—10		1
14. 14	14. 14¼	10—11	1	
14. 17¼	14. 17½	11—10		1
14. 23	14. 23¼	10—11	1	
15. 2¼	15. 3	11—10		1
15. 7¼	15. 8	10—11	1	
15. 10	15. 12½	11—12	1	
15. 13	15. 16½	12—10		2
16. 1¾	16. 2	10—5	11	
16. 7½	16. 7¾	5—2		3
16. 8¾	16. 9	2—4	2	
16. 11½	16. 13¾	4—2		2
16. 15	16. 16¼	2—6	4	
16. 18	16. 19	6—5		1
17. 2	17. 2¼	5—2		3
17. 4¼	17. 5	2—0		2
17. 5¾	17. 7½	0—4	4	
17. 8½	17. 9	4—2		2
17. 10	17. 10¼	2—3	1	
17. 11½	17. 12¾	3—5	2	
17. 14¼	17. 14½	5—6	1	
17. 18	17. 19	6—5		1
18. 0¾	18. 1	5—6	1	
18. 2¾	18. 3	6—5		1
18. 6¼	18. 6¾	5—4		1
18. 10	18. 10¼	4—3		1
18. 14¾	18. 16	3—1		2
18. 17½	18. 17¾	1—3	2	
18. 19¼	18. 20	3—2		1
18. 22	18. 22¼	2—1		1
19. 5¾	19. 6¼	1—0		1
19. 9	19. 9¼	0—1	1	
19. 11¾	19. 12	1—0		1
19. 15¾	19. 16	0—1	1	
19. 23	19. 23½	1—0		1
20. 6¾	20. 7½	0—1	1	
20. 16	20. 16¼	1—0		1
20. 18	20. 18¼	0—1	1	
21. 9½	21. 9¾	1—0		1
21. 14¼	21. 14½	0—1	1	
21. 16½	21. 16¾	1—2	1	
21. 18½	21. 18¾	2—6	4	
21. 21¾	21. 22¼	6—9	3	
22. 0¼	22. 1¼	9—10	1	
22. 16¼	22. 17	10—9		1
22. 20½	23. 1½	9—11	2	
23. 9¾	23. 10	11—12	1	
23. 20¼	23. 21	12—11		1
24. 14½	24. 15	11—12	1	

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction.	Amount of Motion. Direct.	Amount of Motion. Retrograde.
May—*cont.*				
d h	d h			
24. 20¾	25. 0	12—10		2
25. 17	25. 17¾	10—7		3
25. 20¾	26. 0½	7—4		3
26. 3½	26. 4½	4—2		18
26. 11	26. 11½	2—4	2	
26. 13½	26. 14	4—5	1	
26. 20	26. 21	5—4		1
27. 5	27. 6¼	4—3		1
27. 7	27. 7½	3—2		1
27. 11¾	27. 12½	2—4	2	
27. 14½	27. 14¾	4—5	1	
27. 22½	27. 23½	5—3		2
28. 2¾	28. 6	3—2		1
28. 7¾	28. 8	2—3	1	
28. 10	28. 10¼	3—4	1	
28. 13½	28. 13¾	4—5	1	
28. 15½	28. 16½	5—3		2
28. 20¼	28. 21¼	3—2		1
29. 10¼	29. 11	2—4	2	
29. 16¾	29. 17¼	4—2		2
30. 3¼	30. 3½	2—1		1
30. 5¾	30. 6	1—0		1
30. 7¾	30. 8¾	0—2	2	
30. 11¼	30. 11½	2—3	1	
30. 13	30. 13¼	3—2		1
31. 0¼	31. 0½	2—1		1
31. 11¼	31. 11½	1—2	1	
31. 13½	31. 14¼	2—5	3	
31. 15¼	31. 15½	5—4		1
31. 16¼	31. 16½	4—3		1
31. 18½	31. 20	3—4	1	
		Sums	159	131
June.				
1. 5¼	1. 6	4—3		1
1. 6½	1. 6¾	3—4	1	
1. 14	1. 14½	4—5	1	
1. 16½	1. 16¾	5—4		1
1. 19¼	1. 19¾	4—3		1
2. 0	2. 3	3—2		1
2. 8	2. 8¼	2—3	1	
2. 14½	2. 14¾	3—4	1	
2. 16½	2. 16¾	4—3		1
2. 18	2. 18½	3—4	1	
2. 21	2. 21¼	4—3		1
3. 9	3. 9¾	3—9		10
3. 10¼	3. 10½	9—10		15
3. 15½	3. 15¾	10—9		1
3. 17¼	3. 17½	9—10	1	
3. 23¾	4. 0	10—11	1	
4. 7¼	4. 7½	11—0	5	
4. 8¼	4. 8½	0—12		4
4. 10	4. 10¼	12—0	4	
4. 11½	4. 11¾	0—12		4
4. 15¼	4. 15½	12—14	2	

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction.	Amount of Motion. Direct.	Amount of Motion. Retrograde.
June—*cont.*				
d h	d h			
4. 17¼	4. 17½	14—10		4
4. 20½	4. 21¼	10—13	3	
4. 22¼	4. 22½	13—3	6	
5. 3¾	5. 4	3—1		2
5. 6	5. 6¼	1—8	7	
5. 7½	5. 8	8—2		6
5. 10¾	5. 11	2—1		1
5. 14¼	5. 14½	1—2	1	
5. 19½	5. 19¾	2—5	3	
5. 20¾	5. 21¼	5—3		2
6. 0	6. 1	3—2		1
6. 2	6. 2¼	2—0		2
6. 4	6. 5¼	0—2	2	
6. 13½	6. 15¼	2—5	3	
6. 19	6. 20¼	5—3		2
7. 12	7. 13	3—4	1	
7. 15¾	7. 16	4—5	1	
7. 22	7. 22¼	5—4		1
8. 15	8. 16	4—5	1	
9. 1¾	9. 2½	5—10	5	
9. 6¼	9. 6½	10—12	2	
9. 7¼	9. 7½	12—0	4	
9. 9½	9. 11¾	0—5	5	
9. 12½	9. 14½	5—2		3
10. 1¼	10. 3	2—1		1
10. 6	10. 6¾	1—2	1	
10. 8¼	10. 8½	2—1		1
10. 11¾	10. 12	1—0		1
10. 17	10. 17¼	0—2	2	
10. 18½	10. 19¾	2—5	3	
10. 20¾	10. 23¼	5—10	5	
11. 1½	11. 1¾	10—12	2	
11. 2½	11. 2¾	12—11		1
11. 13	11. 13¼	11—9		2
11. 18	11. 18½	9—10	1	
11. 22¼	12. 0	10—11	1	
12. 15	12. 16	11—14	3	
12. 17¼	12. 18	14—11		3
12. 22¾	12. 23	11—12	1	
13. 0	13. 1¾	12—1	5	
13. 3½	13. 4	1—2	1	
13. 9½	13. 10	2—1		1
13. 21	13. 21½	1—0		1
14. 3¼	14. 3½	0—15		1
14. 11½	14. 12	15—0	1	
14. 14	14. 14½	0—2	2	
14. 15¼	14. 15½	2—0		2
14. 17	14. 18	0—2	2	
15. 1½	15. 2½	2—1		1
15. 4	15. 4½	1—0		1
15. 6	15. 6¼	0—1	1	
15. 7½	15. 7¾	1—2	1	
15. 12½	15. 12¾	2—4		14
15. 15	15. 16	4—6		14
15. 22¾	15. 23	6—5		1
16. 8½	16. 10	5—6	1	
16. 12	16. 12¾	6—7	1	
16. 17	16. 19¾	7—5		2
16. 22¼	16. 22½	5—6	1	
17. 4½	17. 6	6—7	1	
17. 7¼	17. 7¾	7—10	3	

ABSTRACT of the CHANGES of the DIRECTION of the WIND—*continued.*

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction.	Amount of Motion. Direct.	Amount of Motion. Retrograde.
June—cont.				
d h	d h			
17. 19½	17. 20½	10—9		1
17. 23	17. 23½	9—8		1
18. 2	18. 2¾	8—9	1	
18. 6¾	18. 8	9—10	1	
19. 6¾	19. 7½	10—9		1
19. 10½	19. 11	9—10	1	
19. 22	19. 23	10—11	1	
20. 5	20. 5½	11—12	1	
20. 20¾	20. 21¼	12—10		2
21. 6	21. 8	10—11	1	
21. 17	21. 18¾	11—10		1
23. 11½	23. 12	10—9		1
23. 19¾	23. 20¾	9—10	1	
23. 22	23. 22¼	10—14	4	
24. 1¼	24. 2¼	14—0	2	
24. 3	24. 4	0—15		1
24. 5	24. 5½	15—13		2
24. 7	24. 7½	13—12		1
24. 8½	24. 9¼	12—11		1
24. 13¾	24. 14	11—10		1
25. 9¾	25. 11¼	10—12	2	
25. 12½	25. 13	12—11		1
26. 0	26. 1	11—12	1	
26. 5¾	26. 6¼	12—13	1	
26. 10¼	26. 10½	13—14	1	
26. 13¼	26. 14	14—11		3
26. 15¼	26. 15½	11—15	4	
26. 16	26. 17¼	15—14		1
26. 19	26. 23	14—11		3
26. 23¼	27. 1½	11—13	2	
27. 4	27. 4½	13—14	1	
27. 10¾	27. 11	14—13		1
27. 14	27. 14½	13—12		1
27. 21½	27. 23¾	12—11		1
28. 8¾	28. 9¼	11—12	1	
28. 22	28. 23¼	12—11		1
29. 13½	29. 14	11—10		1
30. 0	30. 2	10—11	1	
30. 19¼	30. 20	11—10		1
		Sums	128	138
July.				
1. 0	1. 2¼	10—12	2	
1. 6	1. 7½	12—11		1
1. 10	1. 11½	11—14	3	
1. 18	1. 18¼	14—12		2
1. 20¼	1. 21¾	12—11		1
2. 4½	2. 7	11—14	3	
2. 21	2. 22½	14—11		3
3. 1	3. 1½	11—12	1	
3. 5	3. 6½	12—15	3	
3. 8	3. 8¼	15—0	1	
3. 16¾	3. 17	0—6		10
3. 20	4. 2	6—10	4	
4. 5¼	4. 5¾	10—11	1	

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction.	Amount of Motion. Direct.	Amount of Motion. Retrograde.
July—cont.				
d h	d h			
4. 9¾	4. 10	11—12	1	
4. 11	4. 11½	12—11		1
4. 12¾	4. 13	11—12	1	
4. 16¾	4. 17	12—11		1
4. 18¾	4. 19¾	11—13	2	
4. 20¼	4. 20½	13—9		4
4. 21¾	5. 0½	9—11	2	
5. 9½	5. 10¼	11—10		1
5. 15¾	5. 17¾	10—2	8	
5. 19	5. 20	2—10	8	
6. 10	6. 13	10—5		5
6. 20	6. 21¼	5—10	5	
7. 1½	7. 2¾	10—6		4
7. 6½	7. 6¾	6—0		6
7. 10	7. 11½	0—2	2	
7. 15¼	7. 16½	2—5	3	
7. 18¾	7. 19¼	5—6	1	
8. 8½	8. 8¾	6—1		5
8. 15¾	8. 16	1—2	1	
8. 19	8. 19¾	2—5	3	
8. 22½	9. 1¾	5—3		2
9. 10¾	9. 11	3—4	1	
9. 21½	9. 22¼	4—2		2
10. 4	10. 4½	2—1		1
10. 9½	10. 10	1—2	1	
10. 12	10. 12½	2—3	1	
10. 15¼	10. 15¾	3—6	3	
10. 21½	11. 1½	6—2		4
12. 2½	12. 2¾	2—0		2
12. 6	12. 6¾	0—2	2	
13. 1¼	13. 1¾	2—1		1
13. 4½	13. 5¼	1—2	1	
13. 9	13. 9½	2—1		1
13. 19¼	13. 19¾	1—2	1	
14. 11½	14. 11¾	2—1		1
14. 16¼	14. 17	1—4	3	
14. 18½	14. 20	4—5	1	
14. 23½	15. 0¼	5—10	5	
15. 1½	15. 1¾	10—11	1	
15. 5	15. 6	11—1	6	
15. 10¼	15. 10¾	1—2	1	
15. 17¾	15. 18¼	2—1		1
15. 20¼	15. 20½	1—2	1	
15. 23¾	16. 6½	2—13	11	
16. 12	16. 13	13—15	2	
16. 16½	16. 16¾	15—0	1	
16. 21	16. 21½	0—15		1
17. 1½	17. 1¾	15—13		2
17. 4	17. 4¼	13—12		1
17. 5½	7. 5¾	12—14	2	
17. 9¾	17. 10¼	14—11		3
17. 14	17. 14½	11—12	1	
17. 16¾	17. 17¾	12—10		2
17. 19	17. 20	10—11	1	
18. 9½	18. 10½	11—12	1	
18. 17½	18. 18½	12—11		1
19. 7½	19. 8	11—12	1	
19. 10½	19. 10¾	12—11		1
19. 13¾	19. 15	11—13	2	
19. 17	19. 17¼	13—12		1
19. 18¾	19. 19¼	12—10		2

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction.	Amount of Motion. Direct.	Amount of Motion. Retrograde.
July—cont.				
d h	d h			
19. 20¼	19. 22	10—11	1	
20. 4	20. 5¾	11—9		2
20. 7	20. 7¼	9—10	1	
20. 20	20. 21	10—9		1
21. 7	21. 8¾	9—10	1	
21. 22	22. 0	10—9		1
22. 4¾	22. 5¼	9—10	1	
22. 7¼	22. 7½	10—12	2	
22. 11¼	22. 11½	12—11		1
22. 17¼	22. 17¾	11—15	4	
22. 19½	22. 20	15—1	2	
23. 0¾	23. 1	1—2	1	
23. 12¼	23. 12½	2—3	1	
23. 15½	23. 17	3—5	2	
23. 20	23. 20½	5—4		1
24. 1¼	24. 1½	4—3		1
24. 7	24. 8	3—5	2	
24. 21½	24. 22¾	5—6	1	
25. 2	25. 3¼	6—7	1	
25. 6¾	25. 7½	7—10	3	
25. 18½	25. 18¾	10—9		1
25. 22½	25. 23	9—10	1	
26. 6	26. 6¾	10—11	1	
26. 12¼	26. 12¾	11—10		1
27. 0¼	27. 1	10—9		1
27. 5¾	27. 6	9—8		1
27. 10¼	27. 12½	8—10	2	
27. 23½	28. 0½	10—11	1	
28. 2¼	28. 5½	11—0	5	
28. 10	28. 10¼	0—2	2	
28. 15½	28. 17	2—4		14
29. 1¼	29. 1¾	4—6	2	
29. 3	29. 4	6—3		3
29. 9¼	29. 9¾	3—4	1	
29. 12¼	29. 12¾	4—5	1	
29. 18½	29. 23	5—9	20	
30. 7	30. 7¼	9—10	1	
30. 10	30. 10½	10—11	1	
30. 11½	30. 12	11—10		1
30. 23¼	30. 23¾	10—9		1
31. 3	31. 3¼	9—2		7
31. 7	31. 7¼	2—9	7	
31. 14¼	31. 14½	9—10	1	
31. 20	31. 22	10—9		1
		Sums	174	111
August.				
1. 1	1. 1¼	9—7		2
1. 2½	1. 3½	7—5		2
1. 5	1. 5½	5—7	2	
1. 7¼	1. 7½	7—8	1	
1. 10½	1. 11¼	8—9	1	
1. 12½	1. 12¾	9—10	1	
1. 15¾	1. 16½	10—11	1	
1. 17¾	1. 18½	11—10		1

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction.	Amount of Motion. Direct.	Amount of Motion. Retrograde.
Aug.—cont.				
d h	d h			
1. 23	2. 1	10—11	1	
2. 11¾	2. 12	11—10		1
3. 3¼	3. 4	10—9		1
3. 8¾	3. 9¼	9—10	1	
3. 20½	3. 21	10—11	1	
4. 6¼	4. 7¾	11—12	1	
4. 14	4. 14¼	12—11		1
4. 21	4. 22½	11—10		1
5. 2	5. 3½	10—9		1
5. 5½	5. 5¾	9—8		1
5. 7	5. 9	8—10	2	
5. 18¼	5. 19	10—11	1	
5. 21½	5. 22	11—12	1	
6. 1	6. 1½	12—11		1
6. 23½	7. 0	11—10		1
7. 6½	7. 7	10—11	1	
7. 18	7. 19½	11—10		1
8. 3¾	8. 4¼	10—7		3
8. 6½	8. 7	7—8	1	
8. 9¾	8. 10	8—9	1	
8. 11¼	8. 11½	9—6		3
8. 14¼	8. 14¾	6—5		1
9. 5	9. 6	5—4		1
9. 8¼	9. 8½	4—2		2
9. 9½	9. 12	2—8		10
9. 14¾	9. 15½	8—10	2	
9. 18½	9. 19¼	10—9		1
9. 21¼	9. 23¼	9—11	2	
10. 0½	10. 1¼	11—0	5	
10. 12¼	10. 12¾	0—1	1	
10. 20	10. 20½	1—2	1	
11. 3	11. 3¼	2—1		1
11. 6	11. 6½	1—2	1	
11. 12	11. 12½	2—3	1	
11. 15	11. 16¼	3—5	2	
11. 18¼	11. 18¾	5—2		3
12. 4¼	12. 4½	2—1		1
12. 8¾	12. 12	1—4	3	
13. 6	13. 8¼	4—2		2
13. 8½	13. 10	2—4	2	
13. 11¼	13. 11½	4—5	1	
13. 23¾	14. 0¼	5—4		1
14. 2	14. 3¾	4—2		2
14. 8¼	14. 8¾	2—3	1	
14. 11	14. 13½	3—6	3	
14. 18	14. 18½	6—5		1
14. 20½	14. 22¾	5—2		3
15. 2½	15. 4	2—1		1
15. 14	15. 15	1—2	1	
16. 0½	16. 0¾	2—1		1
16. 1¾	16. 2	1—0		1
16. 6½	16. 7	0—1	1	
16. 9	16. 9½	1—0		1
16. 12	16. 12¼	0—1	1	
16. 14½	16. 15	1—0		1
16. 17¼	16. 19¾	0—4	4	
16. 21¼	16. 21½	4—6	2	
17. 7	17. 7½	6—10	4	
17. 8½	17. 9½	10—9		1
17. 11½	17. 12¼	9—12	3	
17. 17¼	17. 17½	12—10		2

ABSTRACT of the CHANGES of the DIRECTION of the WIND—*continued*.

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction.	Amount of Motion. Direct.	Amount of Motion. Retrograde.
Aug.—*cont.*				
d h	d h			
17. 19	17. 21	10—11	1	
18. 9¾	18. 10	11—12	1	
18. 13	18. 14½	12—14	2	
18. 18¼	18. 18½	14—13		1
18. 21½	18. 23	13—0	3	
19. 4	19. 4½	0—1	1	
19. 5¾	19. 6	1—2	1	
19. 9¾	19. 11¼	2—6	4	
19. 15	19. 15½	6—5		1
19. 23	19. 23¼	5—6	1	
20. 4	20. 4¼	6—5		1
20. 10½	20. 11	5—4		1
20. 13½	20. 15	4—5	1	
20. 21	20. 22¼	5—4		1
21. 2¾	21. 3	4—6	2	
21. 6¼	21. 8¼	6—8	2	
21. 11	21. 11½	8—9	1	
21. 14¼	21. 14½	9—10	1	
21. 19½	21. 20½	10—11	1	
22. 0	22. 0¼	11—2	7	
22. 0¾	22. 1	2—4	2	
22. 2½	22. 2¾	4—3		1
22. 4¼	22. 4½	3—2		1
22. 10¼	22. 10½	2—1		1
22. 11¾	22. 12	1—2	1	
23. 5	23. 5¼	2—1		1
23. 14¼	23. 15¾	1—6	5	
23. 22	24. 0	6—7	1	
24. 8	24. 10	7—10	3	
25. 6½	25. 7¼	10—11	1	
25. 13½	25. 14¼	11—12	1	
25. 15¼	25. 16¼	12—10		2
25. 22¼	25. 22½	10—11	1	
26. 0	26. 0¾	11—10		1
26. 6½	26. 7	10—11	1	
26. 10	26. 10¼	11—10		1
28. 8½	28. 9¼	10—11	1	
28. 11¼	28. 11½	11—13	2	
28. 13	28. 14¼	13—10		3
28. 15½	28. 16¾	10—11	1	
28. 21	28. 21½	11—12	1	
28. 23¾	29. 0¼	12—11		1
29. 19	29. 19½	11—12	1	
29. 20½	29. 22	12—11		1
30. 13½	30. 14½	11—5	10	
30. 17¾	30. 18	5—12	7	
30. 23¼	30. 23½	12—10		2
		Sums	126	77
September.				
1. 5¾	1. 6¼	10—11	1	
1. 13	1. 13½	11—10		1
1. 18	1. 20	10—8		2
2. 2¼	2. 2½	8—2		6
2. 4½	2. 4¾	2—4	2	

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction.	Amount of Motion. Direct.	Amount of Motion. Retrograde.
Sept.—*cont.*				
d h	d h			
2. 6	2. 7¾	4—8	4	
2. 9	2. 9½	8—10	2	
2. 19¼	2. 21	10—11	1	
2. 23¼	3. 1½	11—2	7	
3. 2½	3. 3	2—0		2
3. 8¼	3. 8¾	0—2	2	
3. 11½	3. 12	2—1		1
3. 16½	3. 17	1—2	1	
3. 19	3. 20½	2—6	4	
4. 0	4. 1½	6—5		1
4. 7¾	4. 8	5—6	1	
4. 10	4. 10½	6—7	1	
4. 21¼	4. 22½	7—11	4	
5. 1	5. 1¼	11—10		1
5. 2¾	5. 3½	10—12	2	
5. 5	5. 5¼	12—1	5	
5. 7	5. 7¼	1—0		1
5. 16¾	5. 17¼	0—1	1	
5. 18¾	5. 19	1—10	9	
5. 21¼	5. 21½	10—12	2	
6. 2½	6. 3½	12—10		2
6. 9½	6. 10	10—11	1	
6. 17	6. 17¼	11—12	1	
6. 18¼	6. 18½	12—10		2
6. 20¼	6. 20½	10—11	1	
7. 18¼	7. 18½	11—9		2
7. 19½	7. 19¾	9—11	2	
7. 23¾	8. 0	11—9		2
8. 9¼	8. 10	9—10	1	
8. 22½	9. 0¾	10—8	14	
9. 1¼	9. 1¾	8—3		5
9. 11	9. 12	3—2		1
9. 17¾	9. 18	2—3	1	
10. 8¼	10. 8½	3—6	3	
10. 11	10. 11¼	6—5		1
10. 23	10. 23½	5—6	1	
11. 4½	11. 5	6—5		1
11. 7¼	11. 8½	5—7	2	
11. 20½	11. 21	7—12	5	
11. 23	11. 23½	12—7		5
12. 5½	12. 5¾	7—2		5
12. 6½	12. 7	2—3	1	
12. 8½	12. 9	3—6	3	
12. 10½	12. 11	6—8	2	
12. 19	12. 19¼	8—9	1	
12. 23½	13. 0	9—10	1	
13. 6¾	13. 9	10—15	5	
13. 11¾	13. 12	15—1	2	
13. 14¼	13. 15	1—2	1	
13. 21¼	13. 21½	2—1		1
13. 23¼	13. 23½	1—0		1
14. 1	14. 2	0—2	2	
14. 4½	14. 4¾	2—1		1
15. 4	15. 4¼	1—0		1
15. 7	15. 9	0—1	1	
15. 23¼	15. 23¾	1—0		1
16. 5¾	16. 6¼	0—1	1	
16. 11	16. 11½	1—2	1	
16. 16¾	16. 17½	2—1		1
16. 20¼	16. 20½	1—2	1	
17. 1	17. 5	2—0		2

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction.	Amount of Motion. Direct.	Amount of Motion. Retrograde.
Sept.—*cont.*				
d h	d h			
17. 15	17. 15½	0—15		1
17. 23	17. 23½	15—14		1
18. 1¼	18. 1½	14—10		4
18. 2¼	18. 2½	10—11	1	
18. 7¼	18. 8¼	11—12	1	
18. 11¼	18. 11½	12—11		1
19. 10½	19. 11½	11—10		1
19. 17½	19. 18½	10—9		1
19. 19¾	19. 20¾	9—8		1
19. 22½	19. 23½	8—9	1	
20. 0¾	20. 1¼	9—10	1	
20. 20	20. 20¼	10—12	2	
20. 21	20. 21¼	12—11		1
21. 7	21. 8	11—12	1	
21. 10½	21. 10¾	12—11		1
21. 13¼	21. 15	11—10		1
21. 19¼	21. 20	10—12	2	
21. 21½	21. 22	12—15	3	
22. 7	22. 7¼	15—10		5
22. 10	22. 11¼	10—0	6	
22. 13¼	22. 13½	0—2	2	
22. 16	22. 16¼	2—8	6	
22. 17¼	22. 17¾	8—9	1	
22. 18½	22. 18¾	9—6		3
22. 20½	22. 20¾	6—8	2	
23. 2	23. 3¼	8—7		1
23. 8¾	23. 9½	7—8	1	
23. 12	23. 13	8—9	1	
23. 18½	23. 18¾	9—7		2
24. 0	24. 1½	7—8	1	
24. 4	24. 5	8—11	3	
24. 5¾	24. 6¼	11—13	2	
24. 7½	24. 8½	13—15	2	
24. 13	24. 13½	15—13		2
24. 18¾	24. 19½	13—10		3
25. 0½	25. 2½	10—11	1	
25. 11	25. 11¼	11—10		1
25. 17½	25. 18½	10—8		2
25. 20½	25. 22¼	8—10	2	
26. 1	26. 3	10—11	1	
26. 7	26. 7½	11—12	1	
26. 20	26. 20½	12—11		1
27. 14¼	27. 15¼	11—10		1
28. 0¼	28. 0½	10—0	6	
28. 1	28. 2½	0—12		4
28. 4½	28. 5½	12—13	1	
28. 8	28. 8¾	13—14	1	
28. 15¼	28. 15½	14—13		1
28. 21¾	28. 22	13—14	1	
28. 22¾	28. 23¼	14—11		3
29. 7¾	29. 9¾	11—14	3	
29. 18¼	29. 18½	14—13		1
29. 21	29. 22¾	13—10		3
30. 6	30. 9¼	10—13	3	
30. 10½	30. 11	13—15	2	
30. 14½	30. 15½	15—0	1	
		Sums	165	95

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction.	Amount of Motion. Direct.	Amount of Motion. Retrograde.
October.				
d h	d h			
1. 1½	1. 2½	0—15		1
1. 8	1. 9¼	15—0	1	
1. 20¼	1. 20½	0—15		1
2. 3¾	2. 6½	15—11		4
2. 9	2. 9¼	11—0	5	
2. 12¼	2. 12½	0—15		1
2. 13¾	2. 14	15—14		1
2. 15	2. 15¼	14—0	2	
2. 17¼	2. 18¾	0—10		6
2. 23½	2. 23¾	10—8		2
3. 2¼	3. 3½	8—4		4
3. 8	3. 8¼	4—2		2
3. 15	3. 15½	2—1		1
4. 16	4. 16½	1—2	1	
4. 20	4. 21½	2—0		2
4. 23¾	5. 0	0—1	1	
5. 2¼	5. 2½	1—2	1	
5. 13	5. 13½	2—3	1	
5. 15½	5. 16¼	3—2		1
5. 23½	6. 0	2—5	3	
6. 0	6. 0½	5—3		2
6. 1¾	6. 3	3—4	1	
6. 8¼	6. 8¾	4—5	1	
6. 9½	6. 9¾	5—3		2
6. 15½	6. 16½	3—5	2	
6. 19½	6. 21½	5—2		3
7. 4	7. 5	2—1		1
7. 6¾	7. 7	1—0		1
7. 14	7. 18½	0—12		4
7. 23	8. 0	12—11		1
8. 8¾	8. 9	11—0	5	
8. 10½	8. 11¾	0—3	3	
8. 15½	8. 16½	3—5	2	
8. 17¾	8. 19	5—3		2
8. 21	8. 22¼	3—2		1
10. 10	10. 10¼	2—3	1	
10. 12¾	10. 13	3—4	1	
11. 2	11. 3	4—3		1
11. 9½	11. 10	3—4	1	
11. 13½	11. 14	4—5	1	
12. 10	12. 12	5—6	1	
12. 23¾	13. 0	6—3		3
13. 3	13. 3¼	3—6	3	
13. 7	13. 7½	6—5		1
13. 8¾	13. 9	5—2		3
13. 10	13. 10¼	2—5	3	
13. 18	13. 18½	5—6	1	
14. 3¾	14. 4¼	6—10	4	
14. 10¼	14. 12	10—5	11	
14. 13¾	14. 14	5—3		2
14. 14¾	14. 15	3—5	2	
14. 16¾	14. 17	5—4		1
15. 2½	15. 2¾	4—3		1
15. 20¾	15. 21½	3—4	1	
16. 2½	16. 3	4—3		1
16. 7½	16. 8	3—4	1	
16. 12	16. 12¼	4—3		1
16. 14	16. 14¼	3—4	1	
16. 16	16. 17½	4—3		1
17. 3½	17. 4	3—4	1	
17. 13½	17. 14	4—5	1	

ABSTRACT of the CHANGES of the DIRECTION of the WIND—*continued.*

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction.	Amount of Motion. Direct.	Amount of Motion. Retrograde.
Oct.—*cont.*				
d h	d h			
17. 15½	17. 16½	5—4		1
18. 6	18. 6½	4—3		1
18. 12½	18. 14½	3—5	2	
19. 13	19. 13½	5—6	1	
19. 19	19. 21¾	6—8	2	
19. 22½	19. 23½	8—7		1
20. 8½	20. 11½	7—11	4	
20. 17	20. 18	11—10		1
21. 1½	21. 1¾	10—9		1
21. 3¾	21. 6½	9—7		2
21. 10	21. 12	7—9	2	
21. 15½	21. 16	9—10	1	
21. 17	21. 18	10—9		1
21. 21	21. 21¾	9—7		2
21. 23¼	21. 23½	7—8	1	
22. 2½	22. 4	8—9	1	
22. 5½	22. 6	9—10	1	
22. 7¼	22. 7½	10—9		1
22. 8½	22. 11½	9—11	2	
22. 22	23. 0	11—12	1	
23. 2½	23. 3½	12—11		1
23. 9¾	23. 10¼	11—12	1	
23. 13	23. 13½	12—11		1
23. 17	23. 17½	11—10		1
24. 4½	24. 7	10—9		1
24. 9½	24. 10½	9—10	1	
24. 22	24. 22¾	10—11	1	
25. 1	25. 2	11—10		1
25. 5	25. 7	10—11	1	
25. 11¾	25. 12	11—12	1	
25. 15	25. 15½	12—10		2
25. 18	25. 19½	10—11	1	
25. 22½	25. 23	11—10		1
26. 3	26. 5½	10—8		2
26. 9	26. 9¾	8—9	1	
26. 11	26. 11½	9—8		1
26. 13½	26. 15½	8—11	3	
27. 3¼	27. 4	11—10		1
27. 7½	27. 8½	10—3		7
27. 12¼	27. 12½	3—5	2	
27. 12¾	27. 16½	5—1		4
28. 0	28. 0½	1—2	1	
28. 2¾	28. 3¼	2—1		1
28. 9	28. 10	1—2	1	
28. 15½	28. 18	2—0		2
29. 3	29. 4½	0—10		6
29. 11	29. 12	10—9		1
29. 16	29. 17	9—8		1
29. 19¼	29. 19¾	8—9	1	
30. 0½	30. 1½	9—10	1	
30. 12	30. 12¾	10—13	3	
30. 14	30. 16	13—11		2
30. 21½	30. 22¾	11—12	1	
31. 1½	31. 2	12—11		1
31. 4	31. 5¾	11—10		1
31. 8	31. 9½	10—11	1	
		Sums	102	107

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction.	Amount of Motion. Direct.	Amount of Motion. Retrograde.
November.				
d h	d h			
1. 8¾	1. 10	11—12	1	
1. 13	1. 14	12—11		1
1. 16	1. 18	11—9		2
2. 8½	2. 11	9—10	1	
2. 20	2. 21	10—11	1	
3. 3¼	3. 4	11—10		1
3. 7	3. 7½	10—9		1
3. 11½	3. 12½	9—10	1	
3. 14¼	3. 16¾	10—9		1
3. 23	4. 1	9—10	1	
4. 5½	4. 5¾	10—11	1	
4. 11¾	4. 12	11—10		1
4. 15	4. 16	10—9		1
4. 23½	5. 0½	9—10	1	
5. 5¾	5. 6	10—11	1	
5. 7	5. 8	11—10		1
5. 9	5. 10	10—11	1	
6. 3½	6. 4	11—10		1
6. 6½	6. 7½	10—11	1	
7. 2½	7. 4¾	11—10		1
7. 6¼	7. 6¾	10—9		1
7. 10½	7. 13	9—11	2	
7. 15¾	7. 16½	11—10		1
8. 9	8. 9½	10—9		1
8. 11½	8. 13	9—10	1	
8. 21	8. 22¼	10—9		1
9. 0	9. 0½	9—8		1
9. 3	9. 3¼	8—7		1
9. 4	9. 4¼	7—10	3	
9. 5	9. 5½	10—7		3
9. 7¾	9. 11¾	7—11	4	
9. 12¼	9. 15	11—9		2
9. 18½	9. 20	9—8		1
9. 23	10. 0	8—7		1
10. 1	10. 2	7—8	1	
10. 5¾	10. 7	8—9	1	
10. 10	10. 11½	9—11	2	
10. 16¾	10. 17½	11—13	2	
10. 18½	10. 18¾	13—12		1
10. 20	10. 21½	12—11		1
11. 1½	11. 2½	11—10		1
11. 3½	11. 4	10—11	1	
11. 8¾	11. 10	11—10		1
11. 12¾	11. 14½	10—6		4
11. 19½	11. 21	6—4		2
11. 22	12. 0½	4—8	4	
12. 2½	12. 4¼	8—10	2	
12. 15½	12. 17	10—11	1	
12. 19	12. 20½	11—10		1
13. 6	13. 6½	10—11	1	
14. 0	14. 5½	11—8		3
14. 7½	14. 12	8—10	2	
14. 19	14. 20	10—9		1
15. 5	15. 7½	9—8		1
15. 11¼	15. 11½	8—9	1	
15. 15	15. 17	9—10	1	
16. 0	16. 2	10—11	1	
16. 7	16. 8	11—10		1
16. 11¾	16. 12	10—11	1	
16. 16¾	16. 17½	11—10		1
16. 22¼	17. 0½	10—9		1

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction.	Amount of Motion. Direct.	Amount of Motion. Retrograde.
Nov.—*cont.*				
d h	d h			
17. 2	17. 2½	9—7		2
17. 4	17. 4½	7—9	2	
17. 9	17. 10	9—10	1	
17. 17¼	17. 20	10—9		1
18. 8	18. 8½	9—7		2
18. 12	18. 15½	7—0		7
18. 18	18. 18¾	0—15		1
18. 19¾	18. 23¼	15—12		3
19. 6	19. 6½	12—11		1
19. 8	19. 9½	11—12	1	
19. 13½	19. 15¼	12—13	1	
19. 21¾	20. 0	13—14	1	
20. 11	20. 12	14—15	1	
20. 16	20. 16¼	15—0	1	
21. 16¼	21. 16¾	0—15		1
21. 19¼	21. 21	15—11		4
22. 3½	22. 4¾	11—10		1
22. 8½	22. 9½	10—0	6	
22. 12	22. 12¾	0—4	4	
22. 14	22. 14¼	4—2		2
22. 17	22. 17¼	2—4	2	
22. 18½	22. 19¼	4—2		2
23. 7	23. 8	2—3	1	
23. 23½	24. 0	3—4	1	
24. 4	24. 5	4—3		1
24. 14½	24. 15	3—2		1
24. 18½	24. 19	2—3	1	
25. 2¾	25. 4	3—2		1
25. 9¾	25. 10½	2—3	1	
25. 16¼	25. 16¾	3—2		1
25 19¼	25. 19¾	2—3	1	
25. 20½	25. 20¾	3—2		1
26. 7¼	26. 7½	2—1		1
26. 11½	26. 12½	1—3	2	
26. 15	26. 15¼	3—5	2	
26. 16¼	26. 16¾	5—2		3
27. 2¾	27. 3	2—9	7	
27. 7¼	27. 8	9—6		3
27. 9½	27. 11	6—8	2	
27. 13	27. 14	8—10	2	
27. 17	27. 17¼	10—9		1
27. 20	27. 21¼	9—6		3
27. 22¼	27. 22½	6—8	2	
28. 4	28. 6	8—6		2
28. 10	28. 11½	6—8	2	
28. 17	28. 18	8—7		1
29. 2¾	29. 7¾	7—11	4	
29. 11¾	29. 12	11—12	1	
29. 13	29. 13½	12—0	4	
29. 16¼	29. 17½	0—10	10	
29. 18½	29. 18¾	10—9		1
29. 20	29. 20½	9—7		2
30. 1	30. 1½	7—5		2
30. 4¾	30. 5	5—7	2	
30. 10½	30. 11½	7—10	3	
30. 14½	30. 15	10—9		1
30. 18	30. 18½	9—10	1	
30. 19½	30. 21	10—9		1
30. 23	30. 23¾	9—8		1
		Sums	110	97

Greenwich Civil Time. From	Greenwich Civil Time. To	Change of Direction.	Amount of Motion. Direct.	Amount of Motion. Retrograde.
December.				
d h	d h			
1. 3	1. 3½	8—9	1	
1. 5¾	1. 6	9—10	1	
1. 7¼	1. 8	10—9		1
1. 10¼	1. 11	9—10	1	
1. 13½	1. 14¾	10—8		2
1. 15¾	1. 16	8—9	1	
1. 21¼	1. 21½	9—10	1	
2. 5½	2. 5¾	10—9		1
2. 8¾	2. 9	9—8		1
2. 12¾	2. 13¼	8—9	1	
2. 17¼	2. 18	9—8		1
2. 20¼	2. 20¾	8—9	1	
3. 7	3. 7½	9—10	1	
3. 12	3. 12½	10—11	1	
3. 15	3. 17	11—10		1
4. 4	4. 5½	10—9		1
4. 8½	4. 9	9—10	1	
4. 10	4. 10½	10—11	1	
4. 12	4. 12¼	11—12	1	
4. 14¾	4. 21½	12—8		4
5. 9½	5. 9¾	8—11	3	
6. 9¾	6. 10¼	11—10		1
6. 14½	6. 15	10—9		1
6. 16¼	6. 16½	9—8		1
7. 2	7. 3	8—9	1	
7. 9¼	7. 9¾	9—8		1
7. 11½	7. 12	8—7		1
7. 13¼	7. 13½	7—0		7
7. 17½	7. 20¼	0—14		2
7. 22	8. 0¾	14—10		4
8. 7¼	8. 10	10—8		2
9. 0¼	9. 0½	8—10	2	
9. 3¾	9. 7¼	10—13	3	.
9. 8¾	9. 9	13—12		1
9. 13	9. 15½	12—10		2
9. 19¾	9. 20¼	10—9		1
10. 5	10. 7½	9—8		1
10. 14¼	10. 15	8—9	1	
10. 16¼	10. 16¾	9—8		1
10. 20	10. 21¼	8—10	2	
11. 9	11. 11	10—11	1	
12. 3	12. 7	11—9		2
12. 11	12. 12	9—10	1	
12. 15	12. 16½	10—9		1
12. 19½	12. 21	9—8		1
12. 22¾	13. 0	8—6		2
13. 12¼	13. 12½	6—7	1	
13. 14	13. 15½	7—8	1	
13. 21¾	14. 0	8—6		2
14. 4¾	14. 5¼	6—11	5	
14. 7	14. 8	11—10		1
14. 12½	14. 13	10—9		1
14. 15	14. 15½	9—8		1
14. 18½	14. 20	8—6		2
15. 3½	15. 7½	6—8	2	
15. 10¼	15. 12	8—11	3	
15. 16	15. 18¼	11—10		1
16. 13½	16. 14½	10—9		1
17. 1	17. 3	9—10	1	
17. 19¾	17. 20¼	10—9		1
18. 8½	18. 8¾	9—8		1

ABSTRACT of the CHANGES of the DIRECTION of the WIND—*concluded.*

Greenwich Civil Time.		Change of Direction.	Amount of Motion.		Greenwich Civil Time.		Change of Direction.	Amount of Motion.		Greenwich Civil Time.		Change of Direction.	Amount of Motion.		Greenwich Civil Time.		Change of Direction.	Amount of Motion.	
From	To		Direct.	Retro-grade.	From	To		Direct.	Retro-grade	From	To		Direct.	Retro-grade.	From	To		Direct.	Retro-grade.
Dec.—*cont.*					Dec.—*cont.*					Dec.—*cont.*					Dec.—*cont.*				
d h	d h				d h	d h				d h	d h				d h	d h			
18. 14½	18. 15	8—9	1		22. 10	22. 12	11—9		2	25. 11½	25. 13	11—12	1		29. 16¼	29. 17¼	11—10		1
19. 2¾	19. 3¼	9—10	1		22. 14	22. 15	9—6		3	25. 16	25. 16¾	12—11		1	30. 5	30. 6¼	10—11	1	
19. 14	19. 15	10—9		1	22. 20½	22. 21½	6—0	10		26. 3¼	26. 3¾	11—12	1		30. 13¼	30. 13½	11—12	1	
19. 17¼	19. 17½	9—8		1	22. 23¼	22. 23½	0—1	1		26. 6	26. 7	12—11		1	30. 15¼	30. 17¾	12—0	4	
19. 21½	19. 22	8—9	1		23. 2	23. 4½	1—15		2	26. 11¾	26. 16	11—7		4	30. 18½	30. 19½	0—10		6
20. 0¾	20. 1	9—8		1	23. 7	23. 8¾	15—12		3	26. 16½	26. 19½	7—12	5		30. 20¾	30. 23¼	10—0	6	
20. 2¾	20. 3	8—7		1	23. 11¼	23. 13	12—11		1	27. 0	27. 2	12—0	4		31. 1¾	31. 2½	0—10	10	
20. 8½	20. 9	7—8	1		23. 16½	23. 16¾	11—10		1	27. 7½	27. 9	0—11		5	31. 9½	31. 11	10—11	1	
20. 11	20. 12¾	8—13	5		23. 18¼	23. 18¾	10—8		2	27. 11	27. 11½	11—12	1		31. 15¾	31. 16½	11—10		1
20. 15	20. 15¾	13—12		1	24. 3	24. 3¼	8—9	1		27. 14	27. 15	12—10		2	31. 18¾	31. 19¾	10—11	1	
20. 18½	20. 21	12—10		2	24. 5¾	24. 7	9—10	1		27. 22½	27. 22¾	10—8		2					
21. 1	21. 2¾	10—8		2	24. 11	24. 11¼	10—11	1		28. 0¼	28. 0½	8—10	2						
21. 5½	21. 7½	8—5		3	24. 14¾	24. 15½	11—10		1	28. 1¾	28. 2	10—8		2			Sums	108	121
21. 9¼	21. 12½	5—0		5	24. 17½	24. 18	10—11	1		28. 6	28. 6½	8—9	1						
21. 16	21. 16½	0—15		1	24. 22	24. 23	11—8		3	28. 9¼	28. 10¼	9—11	2						
21. 17¾	21. 19¼	15—12		3	25. 0	25. 1	8—10	2		28. 12	28. 12¼	11—12	1						
21. 23	21. 23¾	12—11		1	25. 4	25. 5	10—11	1		29. 3¼	29. 4½	12—11		1					

Excess of Motion in each Month.

1911.	Direct.	Retrograde.	1911.	Direct.	Retrograde.
January	24		July	63	
February	44		August	49	
March	3		September	70	
April	38		October		5
May	28		November	13	
June		10	December		13

The whole excess of direct motion for the year was 304 = 6840°.

MEAN HOURLY MEASURES of the HORIZONTAL MOVEMENT of the AIR in each MONTH, and GREATEST and LEAST HOURLY MEASURES, as derived from the RECORDS of ROBINSON'S ANEMOMETER.

Hour ending	1911.												Mean for the Year.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
h	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1	10·6	14·2	13·1	13·3	8·2	9·6	8·2	8·1	8·2	10·0	15·7	14·1	11·1
2	11·0	14·2	12·9	12·5	8·0	9·6	8·4	7·4	7·6	9·4	16·1	14·6	11·0
3	11·1	14·3	13·1	12·6	7·6	10·0	8·0	7·3	7·9	9·6	15·7	14·4	11·0
4	10·9	14·4	14·1	13·3	7·3	9·9	7·5	7·4	8·2	9·6	15·2	15·1	11·1
5	11·0	14·8	13·9	13·0	7·1	9·8	7·5	7·8	7·6	9·3	15·5	14·4	11·0
6	11·0	14·5	14·4	13·1	7·1	9·8	7·3	7·8	7·9	10·0	15·2	14·4	11·0
7	11·4	15·1	14·0	13·7	7·2	10·5	8·0	7·9	7·9	10·1	15·2	14·5	11·3
8	11·8	15·7	13·7	14·9	7·1	11·3	8·5	8·5	7·9	10·8	14·4	14·5	11·6
9	11·7	15·2	14·4	16·2	7·5	12·1	9·6	9·6	9·4	10·3	15·4	14·0	12·1
10	12·0	16·2	15·2	17·6	8·2	12·8	10·7	10·5	10·2	12·6	16·0	13·9	13·0
11	12·3	16·7	15·9	17·7	9·0	13·8	11·4	10·9	10·8	14·1	17·1	14·2	13·7
Noon.	12·8	18·2	16·4	19·0	10·1	14·3	12·6	11·9	11·5	14·2	17·8	15·0	14·5
13h	13·9	19·2	17·6	19·3	11·9	15·2	13·0	13·0	11·9	15·1	18·1	16·4	15·4
14	13·2	19·2	17·0	19·2	11·6	14·9	13·2	12·6	11·9	15·7	18·9	17·2	15·4
15	13·6	18·5	16·8	20·1	12·2	15·0	13·5	13·3	12·2	15·9	17·8	17·2	15·5
16	12·8	17·8	15·9	20·2	12·5	15·2	13·7	13·7	11·7	15·4	17·2	16·1	15·2
17	11·8	17·5	15·4	19·7	12·6	14·6	13·6	13·4	11·6	13·8	15·8	14·7	14·5
18	11·5	16·2	15·0	19·0	11·6	14·3	12·9	12·6	10·8	12·5	16·0	15·6	14·0
19	11·4	16·0	13·7	16·9	11·1	13·9	11·4	11·4	10·7	12·5	15·6	15·0	13·3
20	12·2	15·6	13·8	16·0	10·4	13·0	11·3	10·5	10·6	11·8	15·6	14·7	13·0
21	11·7	15·7	14·2	15·8	9·6	11·4	10·5	10·2	10·6	11·8	15·1	14·6	12·6
22	11·8	15·5	13·3	15·5	9·6	10·5	9·2	9·5	10·0	11·3	15·9	14·1	12·2
23	11·6	14·9	12·3	14·1	9·4	10·0	8·7	9·3	9·0	11·3	15·6	14·7	11·7
Midnight.	10·6	14·2	12·0	13·5	8·7	9·3	8·3	8·4	8·9	11·0	15·6	14·2	11·2
Means	11·8	16·0	14·5	16·1	9·4	12·1	10·3	10·1	9·8	12·0	16·1	14·9	12·8
Greatest Hourly Measures. (1)	37	47	43	37	35	31	27	25	35	38	42	41	...
Greatest Hourly Measures. (2)	29	35	33	29	27	25	22	21	27	29	32	31	...

(1.) Deduced from the motion of the cups by the formula $V = 3v$;
(2.) ,, ,, ,, ,, ,, ,, ,, $V = 2v + 4$;
where v is the hourly motion of the cups in miles. See Introduction.

MEAN ELECTRICAL POTENTIAL of the ATMOSPHERE, from THOMSON'S ELECTROMETER, for each CIVIL DAY.

(Each result is the mean of Twenty-four Hourly Ordinates from the Photographic Register. The scale employed is arbitrary: the sign + indicates positive potential.)

1911.

Day of Month.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
d 1	+ 634	+1065	+ 854	+ 395	+ 753	+ 227	+ 485	+ 469	+ 589	+ 991	+ 543	+ 383
2	+1033	+ 915	+ 458	− 87	+ 345	+ 350	+ 463	+ 528	+ 514	+1395	+ 351	+ 295
3	+ 709	+ 372	+ 552	+ 918	+ 552	+ 250	+ 687	+ 455	+ 457	+ 947	+ 375	+ 322
4	+ 678	+ 89	+ 455	+1129	+ 915	+ 316	+ 567	+ 594	+ 439	+ 908	+ 311	+ 567
5	+ 644	+ 53	+ 839	+ 931	+ 956	+ 194	+ 425	+ 448	+ 730	+ 597	+ 274	+ 465
6	+ 105	+ 934	+ 685	+1081	+ 515	+ 323	+ 302	+ 423	+ 704	+ 548	+ 573	+ 784
7	+1105	+1342	+ 913	+1027	+ 358	+ 439	+ 324	+ 330	+ 749	+ 597	+ 491	+ 182
8	+ 275	+1107	+ 950	+1101	+ 604	+ 546	+ 453	+ 288	+ 559	+ 405	+ 421	+ 539
9	+ 189	+ 731	+ 533	+ 780	+ 652	+ 415	+ 283	+ 353	+ 523	+ 615	+ 764	+ 743
10	+ 909	+ 602	+ 923	+ 826	+ 620	+ 688	+ 527	+ 583	+ 425	+ 692	+ 597	+ 19
11	+ 340	+ 990	+ 406	+ 823	+ 540	+ 445	+ 593	+ 315	+ 583	+ 470	+ 532	+ 649
12	+ 551	+ 974	+ 631	+1218	+ 571	+ 656	+ 619	+ 238	+ 629	+ 495	+ 151	+ 710
13	+ 994	+1119	+ 720	+ 835	+ 470	+ 780	+ 776	+ 186	+ 590	+ 268	+ 349	+ 335
14	+1213	+1068	+1274	+ 684	+ 67	+1017	+ 582	+ 356	+ 823	+ 150	+ 408	+ 385
15	+1234	+ 960	+ 657	+ 693	+ 409	+ 663	+ 525	+ 676	+1005	+ 105	+ 338	+ 242
16	+1033	+ 491	+ 889	+ 684	+ 351	+ 370	+ 514	+ 802	+1002	...	+ 243	+ 547
17	+ 801	+ 563	+ 314	+ 775	+ 359	+ 302	+ 580	+ 502	+ 815	+ 212	+ 249	+ 142
18	+ 767	+ 294	+ 339	+ 415	+ 425	+ 289	+ 560	+ 703	+ 934	+ 358	+ 95	+ 275
19	+ 871	+ 498	...	+ 312	+ 726	+ 313	+ 594	+ 324	+ 625	+ 154	+ 179	+ 268
20	+ 850	+1117	+ 470	+ 716	+ 827	+ 610	+ 439	+ 227	+ 460	+ 126	+ 473	+ 224
21	+ 834	+ 523	+ 424	+ 481	+ 618	+ 431	+ 469	+ 150	+ 840	+ 120	+1093	+ 223
22	+ 691	+ 557	+ 396	+ 705	+ 591	+ 301	+ 538	+ 286	+ 824	+ 90	+ 974	+ 250
23	+ 732	+ 375	+ 317	+ 443	+ 594	+ 181	+ 228	+ 371	+ 550	+ 259	+ 715	+ 702
24	+ 381	+ 833	+ 733	+ 842	+ 301	+ 292	+ 220	+ 238	+ 601	+ 95	+ 604	+ 323
25	+ 284	+ 445	+ 819	+ 635	+ 301	+ 161	+ 420	+ 363	+ 606	+ 478	+ 678	+ 376
26	+ 426	+ 631	+ 421	+ 782	+ 258	+ 618	+ 468	+ 385	+ 581	+ 400	+ 851	+ 423
27	+ 767	+ 481	+ 97	+ 450	+ 306	+ 747	+ 455	+ 177	+ 496	+ 373	+ 783	+ 644
28	+ 859	+ 226	+ 749	+ 546	+ 257	+ 574	+ 558	+ 200	+ 927	+ 654	+ 457	+ 445
29	+ 785		+ 584	+ 710	+ 334	+ 358	+ 265	+ 439	+1160	+ 603	+ 447	+ 447
30	+ 614		...	+ 848	+ 430	+ 314	+ 306	+ 563	+ 853	+ 195	+ 619	+ 423
31	+ 931		...		+ 235		...	+ 569		+ 524		+ 519
Means	+ 717	+ 691	+ 622	+ 723	+ 492	+ 439	+ 474	+ 405	+ 686	+ 461	+ 498	+ 415

MONTHLY MEAN ELECTRICAL POTENTIAL of the ATMOSPHERE, from THOMSON'S ELECTROMETER, at every HOUR of the DAY.

(The results depend on the Photographic Register, using all days of complete record. The scale employed is arbitary: the sign + indicates positive potential.)

Hour, Greenwich Civil Time.	1911.												Yearly Means.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Midnight	+ 731	+ 660	+ 621	+ 772	+ 520	+ 417	+ 498	+ 447	+ 640	+ 434	+ 475	+ 395	+ 551
1^h	+ 699	+ 603	+ 555	+ 655	+ 486	+ 403	+ 456	+ 405	+ 537	+ 441	+ 433	+ 325	+ 500
2	+ 612	+ 529	+ 490	+ 565	+ 471	+ 391	+ 418	+ 375	+ 525	+ 408	+ 371	+ 304	+ 455
3	+ 535	+ 496	+ 466	+ 538	+ 460	+ 357	+ 394	+ 347	+ 526	+ 371	+ 356	+ 307	+ 429
4	+ 524	+ 489	+ 452	+ 549	+ 456	+ 358	+ 391	+ 341	+ 518	+ 384	+ 389	+ 281	+ 428
5	+ 548	+ 521	+ 442	+ 554	+ 481	+ 389	+ 393	+ 342	+ 541	+ 399	+ 435	+ 253	+ 441
6	+ 581	+ 569	+ 435	+ 600	+ 508	+ 426	+ 415	+ 355	+ 574	+ 408	+ 457	+ 283	+ 468
7	+ 617	+ 633	+ 498	+ 708	+ 532	+ 478	+ 486	+ 386	+ 649	+ 442	+ 490	+ 285	+ 517
8	+ 657	+ 675	+ 563	+ 769	+ 550	+ 495	+ 528	+ 415	+ 723	+ 455	+ 519	+ 330	+ 557
9	+ 730	+ 710	+ 672	+ 794	+ 550	+ 511	+ 571	+ 460	+ 769	+ 486	+ 549	+ 387	+ 599
10	+ 795	+ 762	+ 766	+ 805	+ 557	+ 532	+ 595	+ 492	+ 820	+ 539	+ 579	+ 481	+ 644
11	+ 818	+ 773	+ 804	+ 735	+ 553	+ 529	+ 541	+ 471	+ 809	+ 521	+ 544	+ 497	+ 633
Noon	+ 802	+ 743	+ 751	+ 680	+ 474	+ 455	+ 457	+ 408	+ 743	+ 498	+ 495	+ 500	+ 584
13^h	+ 722	+ 723	+ 710	+ 657	+ 390	+ 398	+ 402	+ 353	+ 695	+ 446	+ 462	+ 487	+ 537
14	+ 710	+ 714	+ 711	+ 688	+ 370	+ 381	+ 398	+ 321	+ 673	+ 458	+ 471	+ 436	+ 528
15	+ 740	+ 744	+ 698	+ 690	+ 439	+ 405	+ 425	+ 303	+ 669	+ 442	+ 522	+ 462	+ 545
16	+ 787	+ 802	+ 687	+ 733	+ 481	+ 424	+ 466	+ 316	+ 664	+ 458	+ 526	+ 448	+ 566
17	+ 809	+ 825	+ 698	+ 779	+ 457	+ 453	+ 478	+ 377	+ 747	+ 503	+ 535	+ 488	+ 596
18	+ 787	+ 846	+ 706	+ 837	+ 441	+ 456	+ 509	+ 389	+ 775	+ 528	+ 550	+ 521	+ 612
19	+ 795	+ 846	+ 600	+ 878	+ 468	+ 459	+ 502	+ 445	+ 832	+ 523	+ 588	+ 512	+ 621
20	+ 807	+ 823	+ 568	+ 865	+ 504	+ 445	+ 523	+ 473	+ 796	+ 500	+ 593	+ 534	+ 619
21	+ 818	+ 780	+ 635	+ 845	+ 540	+ 453	+ 515	+ 501	+ 766	+ 482	+ 574	+ 496	+ 617
22	+ 826	+ 687	+ 697	+ 836	+ 566	+ 462	+ 503	+ 501	+ 754	+ 475	+ 523	+ 476	+ 609
23	+ 767	+ 637	+ 692	+ 826	+ 546	+ 458	+ 516	+ 486	+ 728	+ 461	+ 515	+ 461	+ 591
24	+ 732	+ 626	+ 621	+ 776	+ 504	+ 419	+ 509	+ 453	+ 650	+ 414	+ 474	+ 398	+ 548
Means 0^h.–23^h.	+ 717	+ 691	+ 622	+ 723	+ 492	+ 439	+ 474	+ 405	+ 686	+ 461	+ 498	+ 415	+ 552
Means 1^h.–24^h.	+ 717	+ 690	+ 622	+ 723	+ 491	+ 439	+ 475	+ 405	+ 687	+ 460	+ 498	+ 415	+ 552
Number of Days employed.	31	28	28	30	31	30	30	31	30	30	30	31	...

MONTHLY MEAN ELECTRICAL POTENTIAL of the ATMOSPHERE, from THOMSON'S ELECTROMETER, on RAINY DAYS, at every HOUR of the DAY.

(The results depend on the Photographic Register, using all days on which the rainfall amounted to or exceeded $0^{in}.020$. The scale employed is arbitrary: the sign + indicates positive potential.)

Hour, Greenwich Civil Time.	1911.												Yearly Means.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Midnight	+ 617	+ 577	+ 571	+ 712	+ 557	+ 266	+ 407	+ 404	+ 564	+ 329	+ 358	+ 348	+ 476
1^h	+ 616	+ 432	+ 459	+ 547	+ 530	+ 226	+ 370	+ 381	+ 349	+ 358	+ 326	+ 268	+ 405
2	+ 462	+ 285	+ 358	+ 391	+ 505	+ 222	+ 387	+ 366	+ 383	+ 305	+ 269	+ 265	+ 350
3	+ 331	+ 298	+ 365	+ 366	+ 483	+ 159	+ 413	+ 333	+ 401	+ 242	+ 261	+ 270	+ 327
4	+ 291	+ 318	+ 349	+ 419	+ 417	+ 182	+ 373	+ 344	+ 420	+ 266	+ 297	+ 229	+ 325
5	+ 341	+ 315	+ 274	+ 424	+ 388	+ 260	+ 290	+ 329	+ 440	+ 295	+ 349	+ 178	+ 324
6	+ 402	+ 335	+ 228	+ 468	+ 335	+ 309	+ 133	+ 334	+ 484	+ 311	+ 348	+ 204	+ 324
7	+ 474	+ 422	+ 325	+ 667	+ 272	+ 390	+ 437	+ 324	+ 589	+ 328	+ 374	+ 168	+ 397
8	+ 502	+ 485	+ 442	+ 748	+ 268	+ 401	+ 393	+ 309	+ 745	+ 292	+ 386	+ 196	+ 431
9	+ 570	+ 495	+ 576	+ 708	+ 253	+ 421	+ 303	+ 356	+ 850	+ 305	+ 445	+ 262	+ 462
10	+ 620	+ 557	+ 684	+ 696	+ 267	+ 456	+ 400	+ 396	+ 861	+ 332	+ 507	+ 385	+ 513
11	+ 630	+ 570	+ 782	+ 566	+ 335	+ 461	+ 430	+ 373	+ 792	+ 304	+ 474	+ 413	+ 511
Noon	+ 579	+ 546	+ 746	+ 488	+ 288	+ 407	+ 353	+ 357	+ 783	+ 329	+ 403	+ 418	+ 475
13^h	+ 426	+ 506	+ 734	+ 467	+ 220	+ 389	+ 330	+ 309	+ 816	+ 316	+ 381	+ 420	+ 443
14	+ 382	+ 526	+ 730	+ 530	+ 168	+ 340	+ 287	+ 284	+ 810	+ 287	+ 406	+ 353	+ 425
15	+ 388	+ 595	+ 685	+ 533	+ 173	+ 412	+ 240	+ 226	+ 747	+ 290	+ 470	+ 394	+ 429
16	+ 475	+ 695	+ 609	+ 617	+ 253	+ 470	+ 260	+ 229	+ 688	+ 259	+ 448	+ 380	+ 449
17	+ 528	+ 755	+ 577	+ 700	+ 230	+ 442	+ 307	+ 293	+ 864	+ 258	+ 448	+ 436	+ 487
18	+ 478	+ 789	+ 590	+ 844	+ 53	+ 431	+ 320	+ 160	+ 720	+ 320	+ 447	+ 481	+ 469
19	+ 547	+ 784	+ 468	+ 888	+ 108	+ 529	+ 243	+ 214	+ 836	+ 329	+ 516	+ 466	+ 494
20	+ 683	+ 744	+ 465	+ 831	+ 253	+ 509	+ 610	+ 343	+ 752	+ 325	+ 535	+ 500	+ 546
21	+ 715	+ 676	+ 600	+ 747	+ 412	+ 444	+ 207	+ 430	+ 786	+ 285	+ 511	+ 495	+ 526
22	+ 752	+ 500	+ 697	+ 768	+ 545	+ 370	− 3	+ 397	+ 803	+ 268	+ 464	+ 503	+ 505
23	+ 701	+ 423	+ 733	+ 816	+ 582	+ 357	+ 143	+ 379	+ 858	+ 263	+ 478	+ 480	+ 518
24	+ 654	+ 544	+ 695	+ 806	+ 532	+ 393	+ 337	+ 354	+ 810	+ 200	+ 443	+ 376	+ 512
Means $0^h.-23^h.$	+ 521	+ 526	+ 544	+ 623	+ 329	+ 369	+ 318	+ 328	+ 681	+ 300	+ 413	+ 355	+ 442
Means $1^h.-24^h.$	+ 523	+ 525	+ 549	+ 626	+ 328	+ 374	+ 315	+ 326	+ 691	+ 294	+ 416	+ 356	+ 444
Number of Days employed.	10	11	13	9	6	9	3	7	8	13	18	21	...

MONTHLY MEAN ELECTRICAL POTENTIAL of the ATMOSPHERE, from THOMSON'S ELECTROMETER, on NON-RAINY DAYS, at every HOUR of the DAY.

(The results depend on the Photographic Register, using only those days on which no rainfall was recorded. The scale employed is arbitrary: the sign + indicates positive potential.)

Hour, Greenwich Civil Time.	1911.												Yearly Means.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Midnight	+ 799	+ 885	+ 614	+ 745	+ 514	+ 450	+ 517	+ 481	+ 681	+ 581	+ 570	+ 477	+ 610
1^h	+ 748	+ 901	+ 621	+ 656	+ 475	+ 457	+ 475	+ 430	+ 615	+ 563	+ 522	+ 429	+ 574
2	+ 694	+ 877	+ 596	+ 601	+ 461	+ 460	+ 427	+ 394	+ 581	+ 550	+ 475	+ 385	+ 542
3	+ 640	+ 795	+ 560	+ 576	+ 453	+ 442	+ 394	+ 367	+ 577	+ 526	+ 472	+ 383	+ 515
4	+ 638	+ 755	+ 551	+ 569	+ 463	+ 450	+ 394	+ 356	+ 561	+ 532	+ 503	+ 376	+ 512
5	+ 649	+ 820	+ 565	+ 568	+ 496	+ 459	+ 403	+ 359	+ 575	+ 531	+ 508	+ 387	+ 527
6	+ 672	+ 873	+ 607	+ 606	+ 536	+ 473	+ 447	+ 374	+ 608	+ 529	+ 573	+ 424	+ 560
7	+ 686	+ 921	+ 689	+ 662	+ 578	+ 502	+ 495	+ 423	+ 683	+ 571	+ 640	+ 494	+ 612
8	+ 737	+ 947	+ 748	+ 707	+ 606	+ 513	+ 546	+ 466	+ 732	+ 618	+ 697	+ 575	+ 658
9	+ 808	+1014	+ 794	+ 760	+ 611	+ 521	+ 601	+ 521	+ 766	+ 670	+ 715	+ 615	+ 700
10	+ 882	+1095	+ 854	+ 788	+ 611	+ 531	+ 618	+ 548	+ 839	+ 747	+ 718	+ 658	+ 741
11	+ 918	+1144	+ 831	+ 779	+ 584	+ 519	+ 556	+ 521	+ 851	+ 736	+ 670	+ 641	+ 729
Noon	+ 912	+1077	+ 756	+ 716	+ 491	+ 451	+ 474	+ 430	+ 757	+ 661	+ 660	+ 631	+ 668
13^h	+ 876	+1075	+ 705	+ 684	+ 401	+ 383	+ 414	+ 373	+ 667	+ 612	+ 620	+ 585	+ 616
14	+ 877	+1035	+ 732	+ 700	+ 388	+ 373	+ 415	+ 347	+ 645	+ 637	+ 600	+ 579	+ 611
15	+ 904	+1031	+ 775	+ 698	+ 469	+ 367	+ 451	+ 336	+ 651	+ 649	+ 687	+ 571	+ 632
16	+ 929	+1063	+ 815	+ 724	+ 496	+ 354	+ 495	+ 353	+ 671	+ 684	+ 688	+ 552	+ 652
17	+ 938	+1067	+ 816	+ 774	+ 481	+ 377	+ 498	+ 402	+ 718	+ 745	+ 703	+ 566	+ 674
18	+ 935	+1101	+ 776	+ 811	+ 509	+ 393	+ 527	+ 465	+ 809	+ 750	+ 737	+ 585	+ 700
19	+ 919	+1133	+ 663	+ 846	+ 531	+ 373	+ 532	+ 518	+ 846	+ 724	+ 708	+ 584	+ 698
20	+ 873	+1115	+ 615	+ 858	+ 540	+ 361	+ 518	+ 522	+ 831	+ 681	+ 697	+ 603	+ 684
21	+ 880	+1081	+ 650	+ 858	+ 550	+ 406	+ 555	+ 533	+ 779	+ 675	+ 718	+ 554	+ 687
22	+ 875	+1043	+ 714	+ 838	+ 550	+ 466	+ 560	+ 542	+ 755	+ 679	+ 648	+ 524	+ 683
23	+ 809	+1015	+ 672	+ 813	+ 516	+ 489	+ 553	+ 528	+ 695	+ 650	+ 602	+ 456	+ 650
24	+ 779	+ 896	+ 536	+ 754	+ 477	+ 468	+ 525	+ 492	+ 598	+ 612	+ 553	+ 431	+ 593
Means 0^h.–23^h.	+ 817	+ 994	+ 697	+ 722	+ 513	+ 440	+ 494	+ 441	+ 704	+ 638	+ 630	+ 526	+ 635
Means 1^h.–24^h.	+ 816	+ 995	+ 693	+ 723	+ 511	+ 441	+ 495	+ 442	+ 700	+ 639	+ 630	+ 524	+ 634
Number of Days employed.	19	11	8	17	22	15	26	21	20	14	6	8	...

ROYAL OBSERVATORY, GREENWICH.

OBSERVATIONS

OF

LUMINOUS METEORS.

1911.

Month and Day, 1911.	Greenwich Civil Time.	Observer.	Brightness of Meteor in Star Magnitudes.	Colour of Meteor.	Duration of Meteor in Seconds of Time.	Appearance and Duration of Train.	Length of Meteor's Path in Degrees.	Path of Meteor in the Sky.
	h m s				s		°	° ° ° °
April 21	22. 52. 0	T	1	White	1·0	None	22	171 + 12 to 177 + 32
August 10	22. 55. ±	K & T	1	Yellow	0·3	Faint	13	303 + 38 to 315 + 30
”	23. 14. 14	K	1	Yellow	1·0	1 sec.	13	314 + 41 to 300 + 35
August 11	22. 51. 32	T	1	Yellow	0·3	Slight	10	278 + 40 to 273 + 49
”	23. 10. 9	K	1	Yellow	0·3	Slight	7	18 + 60 to 9 + 56
”	23. 23. 15	S	3	Yellow	0·3	None	13	53 + 54 to 45 + 44
”	23. 33. 45	S	3	Yellow	0·3	Slight	12	30 + 34 to 15 + 35
”	23. 42. 46	S & T	1	White	0·5	Bright	10	168 + 65 to 188 + 60
”	23. 42. 55	T	3	White	0·3	None	6	176 + 66 to 188 + 65
”	23. 47. 30	T	2	White	0·5	None	8	9 + 33 to 5 + 26
”	23. 49. 39	T	2	Bluish-white	0·3	None	9	51 + 45 to 45 + 37
”	23. 50. 20	L	4	White	0·3	None	10	48 + 48 to 57 + 40
August 12	0. 23. 14	K	2	Yellow	0·5	Slight	15	324 + 12 to 318 + 25
”	0. 33. 49	T	2	White	0·3	Slight	7	153 + 67 to 170 + 65
”	0. 40. 35	K & T	>1	Yellow	1·0	6 secs.	19	125 + 67 to 143 + 50
”	0. 41. 13	J & T	1	White	0·5	Slight	11	90 + 68 to 113 + 63
”	0. 47. 33	T	1	White	1·0	Bright	3	158 + 55 to 162 + 54
”	0. 57. 28	T	1	Yellow	0·5	Bright	20	143 + 85 to 21 + 75
”	1. 16. 52	T	3	White	0·3	None	7	323 + 65 to 338 + 65
”	1. 27. 37	K	2	Yellow	0·5	Slight	12	60 + 43 to 75 + 47
”	1. 37. 19	K	1	Yellow	0·5	Bright	6	48 + 49 to 45 + 44
”	2. 22. 5	K	1	Bluish-white	0·5	Bright	10	89 + 37 to 89 + 27
”	2. 33. 46	T	3	White	0·3	Faint	13	314 + 20 to 326 + 23
”	2. 33. 58	T	1	Yellow	0·5	Bright	15	309 + 32 to 326 + 34
”	2. 50. 0	T	1	White	1·5	Bright	12	180 + 65 to 201 + 57
”	3. 20. 22	K	2	White	0·5	None	7	80 + 28 to 83 + 22
”	3. 34. 53	B	1	Bluish-white	0·5	Slight	11	69 + 46 to 75 + 36
August 13	0. 9. 17	B	1	White	0·3	None	4	75 + 38 to 78 + 35
”	0. 14. 16	B	2	White	0·2	None	5	105 + 64 to 109 + 60
”	0. 17. 34	D	1	Bluish-white	0·5	Slight	23	281 + 36 to 263 + 22
”	0. 17. 59	T, D & B	1	White	0·7	Slight	7	305 + 8 to 309 + 4
”	0. 34. 32	T, D & B	1	White	0·3	None	5	248 + 68 to 257 + 66
”	0. 50. 20	D	2	White	0·4	None	25	275 + 46 to 239 + 50
”	0. 57. 40	D	1	Bluish-white	0·5	Bright	40	309 + 45 to 296 + 8
”	1. 0. 2	T	>1	Yellow	1·0	Bright	25	318 + 35 to 305 + 14
”	1. 3. 18	T & B	1	White	0·5	Slight	25	309 + 38 to 297 + 17
”	1. 8. 42	D	1	Bluish-white	1·0	Bright	23	263 + 53 to 294 + 45
”	1. 8. 49	T	2	White	0·4	None	15	35 + 83 to 290 + 80
”	1. 37. 40	T	2	White	0·5	Faint	7	21 + 54 to 12 + 50
”	2. 0. 40	T	1	Yellow	1·0	Slight	15	60 + 20 to 54 + 10
”	2. 5. 51	T	1	White	1·0	Bright	10	53 + 52 to 66 + 48
”	2. 10. 25	T	2	Yellow	0·5	None	12	54 + 37 to 51 + 26
November 13	23. 29. 26	E & T	2	Yellow	0·5	...	17	82 − 3 to 97 + 3
”	23. 43. 36	T	2	Yellow	0·5	Faint	12	82 + 37 to 91 + 27
”	23. 43. 46	E	2	...	0·3	None	8	97 + 14 to 106 + 11

The time is expressed in civil reckoning, commencing at midnight and counting from 0^h to 24^h.

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	h m s				s		°	° ° ° °
November 14	1. 35. 25	FB	1	White	0·4	None	10	62 + 5 to 54 − 4
"	1. 50. 18	T & FB	2	Yellow	0·3	Slight	20	84 + 26 to 105 + 33
"	1. 55. 51	T	3	...	0·1	...	15	55 + 36 to 62 + 22
"	2. 19. 56	FB	2	White	0·5	Faint	11	88 + 54 to 105 + 58
"	2. 57. 28	T & FB	2	Yellow	0·5	Slight	26	120 + 34 to 90 + 47
"	3. 21. 18	FB	3	Bluish-white	0·3	White	12	150 + 64 to 150 + 52
"	3. 25. 18	FB	2	White	0·3	White	5	158 + 40 to 158 +145
"	3. 41. 14	T	3	Yellow	0·3	None	14	158 + 62 to 150 + 75
"	22. 22. ±	T	2	Yellow	0·5	Slight	10	293 + 78 to 246 + 77
"	23. 31. 7	D	3	White	0·5	None	23	50 + 48 to 15 + 56
"	23. 48. 39	D	2	Yellow	0·3	None	6	108 + 30 to 114 + 28
"	23. 59. 41	D	3	Bluish-white	0·2	Slight	11	125 + 57 to 130 + 47
November 15	0. 12. 18	D	2	White	0·5	None	23	77 + 61 to 89 + 84
"	0. 20. 34	T	3	Bluish-white	0·3	Slight	10	128 + 63 to 132 + 54
"	0. 23. 49	T	1	White	0·6	Slight	17	123 + 33 to 140 + 44
"	1. 3. 22	D	2	Yellow	0·4	Faint	22	99 + 40 to 128 + 47
"	1. 25. 12	T	1	Yellow	0·4	Slight	14	81 − 12 to 95 − 13
"	1. 31. 49	D	3	White	0·2	None	15	86 − 10 to 98 − 17
"	1. 33. 40	T	2	Yellow	0·2	None	10	107 + 4 to 117 + 3
"	1. 40. 25	T	1	White	0·8	None	21	102 − 3 to 96 − 22
"	2. 18. 19	D	2	Bluish-white	0·8	1 sec.	23	8 + 64 to 330 + 85
"	2. 25. 21	T & D	2	Yellow	0·2	None	14	39 + 46 to 20 + 42
November 17	20. 47. 22	D	1	Yellow	1·0	2·5 secs.	34	20 + 62 to 74 + 47
December 11	20. 23. 11	D	1	White	0·5	1 sec.	8	83 − 2 to 77 − 7
"	20. 29. 6	D	1	Yellow	0·3	Slight	9	84 + 7 to 75 + 9

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